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MORE NEWS, MORE REVIEWS

Macworld

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Sex & power

Inside Apple's Titanium PowerBook G4

Get personal
20 ways to customize your Mac

17-19-inch screens
We test the best mid-size monitors

Mac OS X refined

Adobe Premiere 6.0
Reviewed and rated

read me first

Simon Jary
editor-in-chief

Are you ready to trust the Mac as the very centre of your existence?

Steve's digital hub test

In January, Apple CEO Steve Jobs electrified the Macworld Expo crowds with his vision of the "third great age of the personal computer". This new era is based around the convergence of digital devices – cameras, PDAs, mobile phones, e-books, camcorders … and, probably, those smart-fridges that we're always being told will control our lives in the next couple of years, but still allow milk to go rancid a few days after its sell-by date.

Jobs called all this computer-device convergence our "digital lifestyle" (see pages 18-19). I'm sure we'd all benefit from moving in the digital direction that Steve suggests. But first, it would be useful to see exactly where we stand on this path to digital deliverance. Try answering these ten simple questions, and clock up your scores at the end to see if you're on track for hailing your Mac as the "hub" of your very existence.

1 Your music collection is…
(a) Thousands of MP3 files organized by Apple's iTunes;
(b) Discs stacked alphabetically in a wireframed Philippe Starck CD stand from Habitat;
(c) A pile of vinyl records lent against your bedroom wall.

2 When you show off your holiday snaps to friends and relatives, you…
(a) Direct them to your Apple iTools Web site;
(b) Send them a batch of prints from your colour inkjet;
(c) Pass around a bulging leatherette photo album for friends and relatives to add their tea-stained fingerprints to prized pic of yourself standing next to ITN's Trevor McDonald at the taxi rank.

3 It's your best friend's wedding day, so you…
(a) Offer to capture the big day on your FireWire camcorder, edit in Final Cut Pro or Premiere, and output the results to DVD via Apple's iDVD and new DVD-R SuperDrive;
(b) Video the events, edit in iMovie 2, and output to video tape;
(c) Noiselessly mouth the words of all the hymns, then rush off to the champagne reception to get as many bubbles down your parched throat as possible before the crowd of aunts and uncles get near the bar.

4 It's your turn to arrange the football-club social, you…
(a) Beam Vindigo-based pub contact details from your Palm V that link to the Web site you created specially for the event, including maps in PDF form;
(b) Send a jokey email to all involved;
(c) Phone Trev, and tell him to let the others know that, yet again, it'll be at The Slug and Lettuce in Islington.

5 You think Steve Jobs is…
(a) God;
(b) A better advert for Levi's than for Gillette;
(c) That nasty *EastEnders* actor who's played by Martin Kemp from Spandau Ballet.

6 You think Bill Gates is…
(a) The devil himself, who robbed our Apple of its innovative graphical user interface to create the evil Windows empire;
(b) A bit dodgy in his business dealings, but also the man who bought us Office 2001 on the Mac;
(c) The former bass player in the Rolling Stones.

7 It's bedtime. You've poured yourself a Horlicks, and are ready to settle down with a good book. You…
(a) Download the e-book version of Alan Deutschman's *The Second Coming of Steve Jobs* from Amazon.com, and turn up the brightness on your Titanium PowerBook G4;
(b) Pick up that 900-page *Photoshop 6.0 Bible*, and, not for the first time, try to understand the Gradient Options palette in relation to transparency masks;
(c) Pick up the crumpled remains of the *Sunday Times* Culture section that weren't used to line the cat's litter tray several days earlier.

8 Your idea of fun is…
(a) Installing the SuSe Linux operating system on one partition of your Power Mac's RAID drive, so you can performance-benchmark it against the latest beta version of Mac OS X that you downloaded from hotlinesw.com;
(b) A network game of Quake III in which you corner your boss, and let him have it with your fully loaded Hyperblaster;
(c) Lily Savage's Blankety Blank.

9 You think the 'X' in Mac OS X is pronounced…
(a) Unix;
(b) Ten;
(c) X, of course!

10 When you heard about Apple's PowerBook G4, you…
(a) Wondered whether Apple's titanium has a hexagonal close-packed crystal structure or a body-centered cubic structure;
(b) Thought about selling your car to buy one;
(c) Thought "Wow… a metal with a 'tit' in it!"

> "Is your idea of fun a network game of Quake III in which you corner your boss, and let him have it with your fully loaded Hyperblaster?"

Mostly (a/s: You are Steve Jobs, and your Mac sits in the middle of your ADSL-enabled loft apartment, directing and micro-managing your life via all your indispensable digital devices. Your electricity supplier sends you Christmas cards, and your Cinema Display rarely gets the chance to enter Sleep mode.

Mostly (b/s: You've got a Mac at work and at home, and you're no Dummy. You understand news reports on dot-com business failures, and are really looking forward to installing Mac OS X as soon as a Carbonized version of The Sims is released.

Mostly (c/s: You thought this copy of *Macworld* was the latest issue of *Hello*, and couldn't for the life of you understand where the "EXCLUSIVE Pictures" of Anthea Turner's skiing holidays were hidden. Or, you use Windows. MW
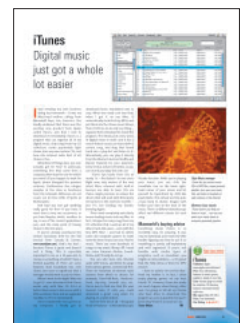
COVER STORIES ▼

REVIEWED: OS 9.1, iTUNES, NEW POWER MACS

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Macworld

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Reviewed and rated

NO CD?
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IDG   MARCH 2001   £4.99

Screen therapy

Macworld www.macworld.co.uk

MARCH 2001 Contents

Your Star Letter wins a copy of Office: 2001, worth £480

We reward the best reader letter with a copy of Microsoft's Office: 2001 for Mac. This integrated package includes enhanced versions of the market-leading Word, Excel and PowerPoint programs, as well as the new Entourage – a personal-information manager and email client.

Write to: Letters, Macworld, 99 Gray's Inn Road, London WC1X 8UT.

Or email letters@macworld.co.uk. Please provide full name and contact details.

Subject: ROM for your life

Recently, I had a disturbing experience with a Power Mac G4 in our studio.

While toiling away at my desk, a loud crack came from within the G4 and a second later the DVD/CD-ROM drive opened by itself, and spat out at high speed two halves of a CD. The broken pieces hurtled 20 feet across the room, hitting the far wall. The speed with which they flew out was astounding – luckily they hit no one.

Are there any other manic Macs out there? Is Apple keeping quiet about this?
Charles Sim

Subject: Artless Apple

I am an art teacher and read with interest of both Apple's falling profits and its drive to capture the education sector. Two years ago, my college received extra money and planned to spend it on technology. I wrote to all the major players.

Within a week, Siemens had visited to pitch for our business. Apple UK, though, wrote back to say it didn't deal with non-profit organizations.

I still think Apple machines are great, but we now run two Siemens machines in our department.
Chris Lock

Subject: Apple's logo motive

I am 12 and have been a Mac fan for as long as I can remember. A year ago, we replaced our IIcx with a DV 400MHz Blueberry iMac. Even though the iMac is cool, what's

best about Macs is OS X. It makes life so simple, looks good and is miles better than Windows. Apple is one of the few companies whose slogan, Think Different, really suits it.
Kieran Doherty

Subject: Mac gets my backup

I have a 13GB iMac DV SE and a Zip 100MB drive, and recently thought I'd better look at a better back-up solution.

But then, horror, I had a system crash and lost the contents of my hard disk before having a chance to back anything up.

We should all back up, and if I had a penny for everyone that doesn't, I'd probably be able to afford a DVD writer.

Next time I get a new computer I'm getting a cheaper one and spending the difference on a decent backup solution.
Phillip Bagnall

Subject: Debt of gratitude

When I was nine years old, I was diagnosed as having dyslexia, and, ever since, have used Macs to do all of my school and home work.

I am now 17 and have just bought myself a new iBook. It's fantastic. Macs have helped me all through my life and I'm forever in debt to Apple. I now want to go to university to become a programmer.

Thanks Apple!
Andrew Sinclair

Subject: Rack off

I wasn't sure how far your tongue was in your cheek in your review of G-Rack. I had already found that two blobs of Blu-Tack do the job – securing and tilting the CD-writer enough for the tray to clear the G4 handle.

Less than the cost of glass of water.
Canon Christopher Hall

Subject: Corporate cry

While the arrival of the new PowerBook Titanium G4 is to be welcomed, the numerous Net PowerBook forums say the average Macintosh user is

actually crying out for an iCubeBook, or sub notebook – something like the Duo that Apple introduced in the early 1990s.

While Apple is forging ahead at the top end of the laptop market, it's neglecting the other end – the bottom of the corporate market. It's a more profitable market than Apple realizes.
RM Herbert (captain).

Poetry corner

Everyone scoffed and laughed, everyone said, I must be daft.
But I ignored all the flack, and bought a brand-new Mac
I know that I'm no spring chick, you can call me old – not thick.
Although a granny of over 50, my brain's still sharp and nifty.
I know I'll never master it all, RAM and what to install.
But two years on, I've no regret, 'cos now I'm on the Internet.
I learnt to surf with real ease, it's so much better than PCs.
My progress was really quick, With just a mouse... and a click.
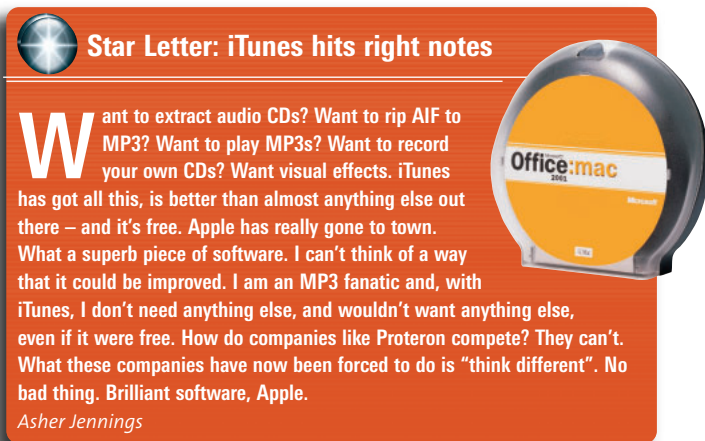*My sons now no longer tease, as I'm a wizard on the keys.*
And the reason for this aplomb? My own site – britabevis.com!
Please visit!
Brita Bevis

Subject: Trackball, not screwball

Your coverage of mice (Reviews, January 2001) is good – but limited and biased. I can't abide either mice or trackpads, and these kept me away from Macs for a while. Once I discovered trackballs, however, the move from Windows was inevitable and irreversible. Does this make me a weirdo, Mr Jary? We just "think different".
Kostas Laskaris

Subject: Can chop burners?

The inclusion by Apple of a CD-RW in its new top-end G4s is admission of its tactical mistake in not doing so earlier.

The trouble is, most pro Macintosh users will already own CD-RW drives, so are hardly likely to want to buy another one bundled with a G4 tower.

Surely it would have been better for Apple to lose the burner – and drop the prices.
Jonathan Quinn

Beige defender

I find your remarks about older Macs rather insulting to the Mac users out there. I have a Power Mac 7200/75 and plan to upgrade to a 7300 simply because of the versatility of the machine. It will take a G3 card, and support SCSI, USB and FireWire. Give me versatility over speed and pretty colours any day.
Glen McKnight

At least it's not Windows: I

Any Mac is a good Mac – no matter how old. If it still breathes fire, then why toss it? A Mac isn't a PC, no matter how old it is. Think about that!
Jake

At least it's not Windows: II

Older Macs are not Windows PCs. But, at their current pricing, they could easily be G3'd for half the cost of a PC without the heartache of the crappy user interface known as Windows.
Jeff Garrison

Not nuts

We are not nuts. We are purists/Mac-hobbiests/keepers-of-the-Mac-flame... but we are not "nuts".
Brad Barnett

Mac IIci a match for G4

It is inappropriate and impolite to describe the *users* of 680x0 systems as backward, when you actually mean that the systems are backward – measured by today's standards.

This is your challenge: Come up with some non-audio and non-graphic general office tasks that you'd like to perform. I dare you to state that I don't outperform you on our Mac IIci.
Mart Bakker

Upgrades cheaper than new: I

You say that sticking a 450MHz G4 upgrade card into a beige G3 isn't worth it, because you can't use USB/Firewire peripherals. If one can't afford to buy a new Mac, one can't afford to buy the new peripherals either. And, to buy a new Mac means you have to buy new USB/FireWire stuff to go with it. On the other hand, if the beige G3 owner buys an upgrade card he or she can carry on using the ADB/SCSI hardware already in situ.

As Simon Jary points out, you can buy a USB card for very little. The cost of the G3/G4 upgrade card added to the price of the USB card is still a lot cheaper than buying a new Mac, new printer, new external CD-RW and new scanner.
Ann Farr

Upgrades cheaper than new: II

Older Macs are used by people who either can't afford the price of a new Mac or don't feel that the cost of new Mac is warranted, as the older machines do the tasks they require quite adequately. Spending £500 on upgrades to an older Mac that already has a 17-inch screen and lots of RAM makes sense. Both machines run the same software, with little performance difference between them.
Mark McCague

Doctor's orders

I own four different 680x0 Macs, from a humble SE which I use for wordprocessing, a IIci which is used as a mailserver, a FX with a 68040 Rocket card that serves as a fax server and general file dump, and a IIci that handles the laboratory results via telnet in the cottage

hospital adjacent to my surgery (PCs just crashed all the time).

All of these machines work flawlessly 24 hours a day and each cost me no more than 20 quid (including monitor). They're all connected via ethernet to my iMac, which makes file transfers a doddle. I love them because they are reliable, simple to use and easy to set up: all you need is System 7.5 and Open Transport. Why buy an expensive PC when you can do your chores with a charming Mac from another era?
Dr Dirk Pilat

Old Macs still work: I

We run a busy design and presentations studio and I agree that life has been made easier by our purchasing new machines, but our old Macs are still perfectly adequate for some tasks. Our original IIfx Mac – bought 10 years ago – still does sterling service for our receptionist. Writing letters and running the accounts does not require a 400MHz processor. A Quadra 950 acts as an ISDN server; a Centris 650 is fine for the kids at home; and a Power Mac 7600/120 is used for backup CDs.

Newest might be nicest, but how many times can you say you really notice that improved performance after a few weeks? The impact of the Internet, and programs such as Adobe Acrobat, have resulted in file sizes being a fraction of what they were a few years ago. Are

we all victims of a newest, fastest, best society?
Chris Hoskins, director, Ellipsis

Old Macs still work: II

The economics of upgrading your Mac hardware have always been marginal. However, there's an army of Mac users out there for whom software upgrades can be effective – and many of them are still using pre-PowerPC Macs. An old Mac running early System 7 and ancient software can be transformed by updating the software. Remember the OS 8 ads? "It's like having a new computer." My old Mac IIsi is doing sterling work at a primary school in Uganda – the first in Entebbe to have its own computer – thanks to an updated system and Clariworks 4.

The same goes for a friend's LC 475 (8MB RAM) system with its hard disk in a mess and StyleWriter 1500 that wouldn't work with it. With system 7.5.5 installed – free from Apple – and Clariworks 5, the computer was transformed into an effective and nippy computer ideal for word processing, spreadsheets, databases – the things we use them for most of the time.

Please send me your old machines and I'll pass them on to a school in Uganda – but, please, nothing older than a 68030 processor!
Alastair Nisbet (alastairnisbet@mac.com)

Thirty-day trials of Dreamweaver 4 and Ultradev 4, excellent playable demos of Star Trek: Elite Force and Diablo II plus all the latest shareware, demos and updaters make this a CD for everyone. Over to Vic Lennard...

MAIN ITEMS ▼

macromedia
DREAMWEAVER 4
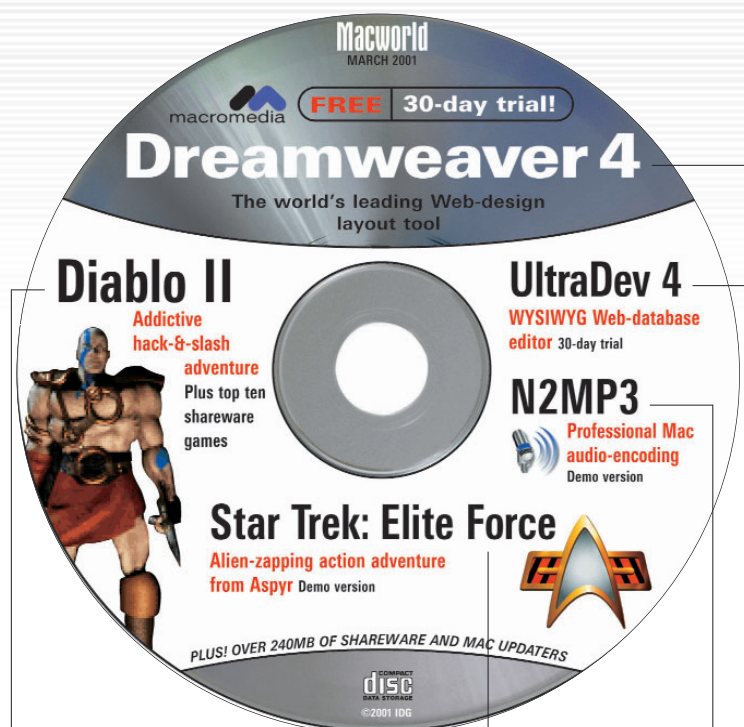
Macromedia Dreamweaver 4 30-day trial

Macromedia Dreamweaver 4 has everything you need to develop a professional Web site. Build Macromedia Flash graphics directly in Dreamweaver. Whether you use its visual layout tools or its text-editing environment, the intuitive Macromedia User Interface makes it easy. Version 4 has many new features including Code and Layout Views, a JavaScript Debugger, Macromedia Flash Buttons and Text, and Roundtrip Graphics Editing.

Requires a Power Mac with Mac OS 8.6 or 9.x and 32MB available RAM.
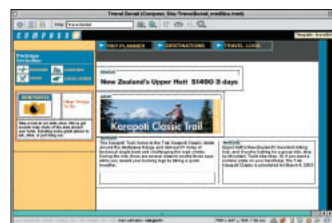
Macromedia UltraDev 4 30-day trial

Designed specifically for application development, Dreamweaver UltraDev is based on the Dreamweaver core architecture. If you already use Dreamweaver, you will appreciate the familiar interface and working environment. New features include Split View, Text Editor and Remote Database Connectivity.

Requires a Power Mac with Mac OS 8.6 or 9.x and 64MB available RAM.

macromedia
DREAMWEAVER ULTRADEV 4

Diablo II Shareware

Journey through the lands of Sanctuary as your Barbarian seeks to do battle with Blood Raven in this single-player demo of Diablo II. Whether you're new to role-playing games or a skilled veteran, you'll be faced with the challenge of leading your hero to victory over the denizens of the underworld. Can you destroy the evil that has plagued this once peaceful land and stop the dark reign of Diablo?

Requires at least a G3 running Mac OS 8.1 or later with 64MB RAM and virtual memory turned on.
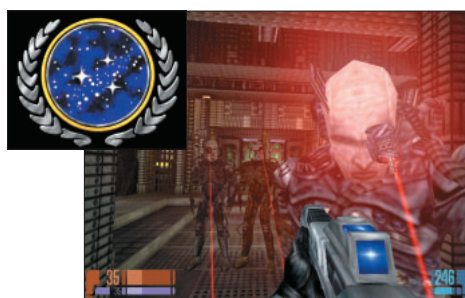
Star Trek Elite Force demo

Star Trek Voyager: Elite Force is the ultimate, sci-fi first-person shooter using the Quake III Arena engine. Elite Force pits players against a multitude of Star Trek enemies, including the relentless Borg and never-before-seen aliens.

The single-player demo requires a 266MHz G3, iMac (rev B) or higher, 64MB available RAM, 3D-accelerated video card with 6MB VRAM, 128MB Virtual Memory and Mac OS 8.6 or higher.

N2MP3 Pro 1.0 demo

Whether you are putting music on the Web, recording audio on to your Mac or converting your CD collection into MP3, N2MP3 Professional is a state-of-the-art solution designed to handle your encoding needs. High-quality encoding plus the power and flexibility of multiple encoding engines. Requires a Power Mac with Mac OS 8.5 or higher.

Cover CD
MARCH 2001

INSTALL ▶ Before you start working your way through the software on our CD, go to the System Utilities folder and make sure you install the following:

■ **Acrobat Reader+Search 4**
Install this version to be able to read many of the on-screen manuals.

■ **StuffIt & RealPlayer**
Versions 5.5 and 6.0 of StuffIt Expander and DropStuff are included as is the installer for RealPlayer 8.

■ **System tools & ATM Lite**
The CD also carries the latest version of InternetConfig, UnZip 5.32 and ATM Lite 4.6.1 (required for Suitcase 9).

■ **QuickTime 4.1.2**
Some programs require QuickTime 4.1.2. This can be downloaded from www.apple.com/quicktime/download.

INSIDE MACWORLD ▼

Microsoft Office M'ger
Quickly start or switch between Office 98/2001 programs, other Macintosh programs, or frequently used files using the Office Manager menu.

PageSpinner 3.0.2
HTML editor for Mac OS that supports HTML 3.2, HTML 4, XHTML 1.0 plus additional Netscape/Explorer extensions. Shareware.

Painting 2.0
Application for creating/editing graphics with all the standard paint tools, including flood fill and text with anti-aliasing. Shareware.

Style 1.8
Scriptable text editor that picks up where SimpleText leaves off. Powerful formatting capabilities and no 32KB file size limit. Shareware.

Virtual Drummer 4.1.1
An easy-to-use drum machine that utilizes Apple's QuickTime technology. Requires no external hardware to hear drum sequences. Shareware.

plus...
Audiocorder, Combustion 1.0 demo, Script Debugger 2 demo, SiteToolkit 1.0, Aladdin Transporter demo.

Eye Candy 4000 demo
Excellent collection of Photoshop compatible filters for practical, stunning effects.

CD CATALOGUE ▼

Courtesy of Mark Pirri's superb DiskTracker program, Macworld brings you a searchable catalogue of all our CDs from 1997 to 2001 – over 206,000 files! This will grow month by month to allow you to find any file you want, without wearing out your CD-ROM drive. The latest version of DiskTracker (2.1) is also included – don't forget to register if you find our library useful.

SERIOUS SOFTWARE *includes* ▼
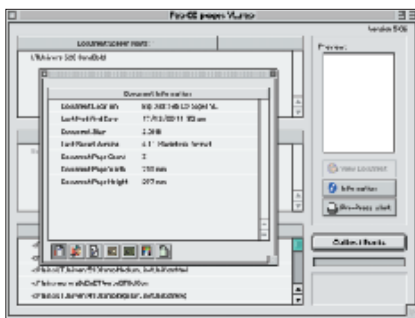
FontXpress 5.06 demo
FontXpress is a stand-alone software application that works in conjunction with the Collect For Output report from QuarkXPress to collect all of your QuarkXPress document fonts on to a disk for output by a service bureau. It will also alert you to potential output problems that may exist with your document.

Using the Report file, FontXpress starts the font collection process from the appropriate font folder. It first checks your font menus for any fonts that are currently installed and active and then determines if there are any uncollected fonts remaining.

The demo is fully functional, but will collect only a few of each document's fonts.
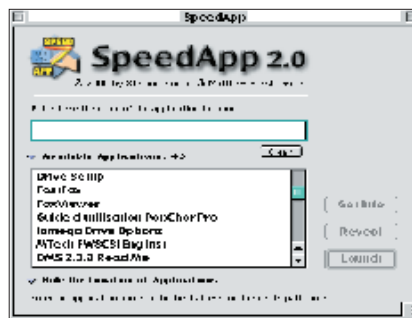
SpeedApp 2.0.2 trial
SpeedApp is the fastest way to run an application. Using a shortcut, you can call SpeedApp from the Finder (as with Sherlock), then type an application name (or simply a portion of it) in the main window of SpeedApp and press the Enter/Return key on your keyboard to quickly launch the application you want to use – no mouse use, no opening of folders. It works by scanning your Mac for all available applications, saves a file in the preferences folder and then refers to this file every time to find the application you are typing.

This evaluation version is fully functional for 28 days, and then has some limitations until registered.
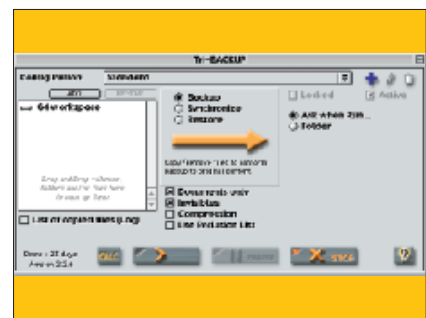
Tri-BACKUP 2.26 trial
Tri-BACKUP can assist you in data backup (mirror or incremental), data restoration (in case of file loss), data synchronization of two disks or two folders, and regularly scheduled and synchronized data backup, suited to your needs.

Tri-BACKUP can handle any volume (and its contents) on the desktop of your Macintosh including the the volume from which to backup, the volume to be synchronized or the volume into which the backup should be made. Tri-BACKUP handles files and copies these files when backing up or when synchronizing.

This version is fully functional and runs for 30 days.

Cover CD MARCH 2001

FAULTY COVER CD-ROM?

•If your cover disc is broken and you want a replacement CD, please contact Kelly Crowley, on 020 7831 9252, or email at kelly_crowley@macworld.co.uk.
•If your cover CD doesn't seem to work as it should, please check you have read all the instructions on the cover disc pages carefully first. If it still doesn't work, then please email Woody Phillips at woody@macworld.co.uk.

GAMES WORLD

DEMOS & GAMES

(Top row)
Bub & Bob, Plunk!,
David's Backgammon
(Middle row)
Snood, ∑ Chess
(Bottom row)
Solitaire Till Dawn, Kognix
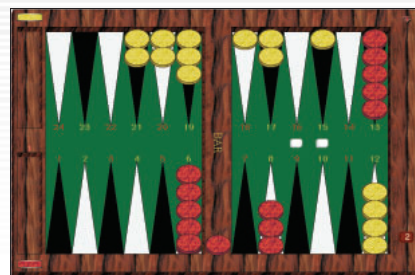
In our Top 10 Shareware Games, the arcaders among you will want to try the first eight levels of Bub & Bob 1.7.2, a one- or two-player platformer, Space Bug 1.2 or Snood 2.11. Then there's Mega Minesweeper 1.6.5 – but you'll need either the Mac OS X Public Beta or CarbonLib 1.1 or later (available from asu.info.apple.com) to play this.

If you have the desire for a board or card game, head for David's BackGammon 3.9.4 or ∑ Chess 5.1.2. You can even Solitaire Till Dawn with 100 goes at v4.0 of this excellent shareware compendium of card games. For those who prefer a more brainy pursuit, try Kognix, a fiendish ball-pushing game, or the tile-matching Plunk! 1.5.

That just leaves Ghetto Games 2, a selection of seven easy-to-play timewasters. Enjoy until next month!

ALSO ON THE CD

DON'T MISS…

COMMS & INTERNET
13 applications including:
Email Effects 1.6.6
Fetch-O-Matic 2.4
Interarchy 4.0

EDUCATION
Five utilities including:
Language Assistant 2.0.1

FONTS
Four items including:
FontBuddy 2.1
FontShowcase 3.0.3

GRAPHICS

Five items including:
Etchelon Macdoodle 2.1.1
QuickMovie 1.3
SolarCell

ICONS & UTILITIES
Three items including:
Iconographer 2.0.1

INFO

ATPM 7.01
Extension Overload 5.6.1
*plus six utilities
for developers*

MATHS & SCIENCE

Five programs including:
earthbrowser 1.3.6
Periodic Table 2.6

SCREENSAVERS
Three programs including:
BlackWatch 1.5.5

SOUND & MUSIC
Nine programs including:
Amadeus II v3.0

Audion 2.1
Sound Studio 1.5.3
Virtual Composer 2.7.2

UTILITIES
*Nine categories comprising
almost 50 useful tools for
your Mac including:*
Appearance Menu 1.1
CDFinder 3.0.1
CoolCam 1.7
Decode da Code 1.5
Drop Drawers 1.5
EjectMenu 2.5
File Buddy 6.0.3
FinderMenuTuner 1.5
iOrganize 3.2
KeyStrokes 2.0.2

PowerPrompter 1.7
Power Windows 2.4.4
PrintToPDF 2.1.6
QuickWindow 2.0
Startup Doubler 2.6

SwitchBack 3.2
TextSpresso 1.8
Znippetizer 1.2.4

UPDATERS
*This month's dedicated
updaters folder includes
almost 50MB of patches
to bring many popular
applications bang
up-to-date, including:*
BBEdit 6.0.2
DAE 5.0.1cs7
Norton AntiVirus 5-7 (01/01)
PrintoolsXT 2.1
SurfDoubler 6.8.0
Vicomsoft Server 6.8.0
Virex (01/01)
VirusBarrier Updater 1.5
VirusBarrier (01/01)
VSE Search Engines 7
VST USB Floppy 2.1.6
XPressImage 4.15

■ Cool Extras
Kaleidoscope 2.3 –
Latest version of the Mac interface enhancer.

New Mac icons –
All the latest iMacs and iBooks for OS X or below courtesy of IconFactory.

■ Mac ISPs
Internet access offers from Abel gratis, AppleOnline and LineOne.

■ Netscape/Internet Explorer
Complete packages for Netscape 6 and IE 5.

■ Plus…
… many thanks to Simon Youngjohns for our CD icons.

SHAREWARE

Shareware is a distribution method, not a type of software. It makes fitting your needs easier, as you can try before you buy. Shareware has the ultimate money-back guarantee – if you don't use the product, you don't pay for it. If you try a Shareware program and continue using it, you are expected to register. Support shareware authors so that they continue to provide high-quality programs for the Mac.

Association of Shareware Professionals

Mac 'hub of digital future'

Macworld EXPO

We decided to start 2001 with a bang," said Apple CEO Steve Jobs, beginning his Macworld Expo keynote speech in San Francisco. Jobs went on to announce the global release date for Mac OS X, launched a revamped Power Mac G4 line, unveiled the Titanium PowerBook G4, and introduced the SuperDrive – a combined DVD and CD rewriter. He showcased two new applications, iTunes and iDVD, and spelled out his vision of a "digital lifestyle".

The products were well-received by the 5,000-strong keynote audience, which whooped for joy at each announcement. The PowerBook G4 won a standing ovation from those temporarily resident in Jobs' famed 'reality distortion field'.

Jobs broke Apple's customary silence on strategy to discuss the company's long-term vision. One of the pioneers of the personal-computer industry, Jobs' ideas carry weight within it. He dismissed analysts' and PC makers' fears of the demise of the personal computer:

"We don't think the PC is waning," said Jobs. "We believe that it is evolving."

The Mac, he said, will become "the digital hub of the digital lifestyle".

To prove his point he looked back to the first "golden age" of personal computers: the Age of Productivity, itself kick-started by Apple's revolutionary ability to handle desktop-publishing applications. DTP and spreadsheets were the "killer apps" that drove PC sales from 1980-1994, he said. Jobs looked back at the second golden age of the late 1990s: the Age of the Internet. Again, Apple

"We don't think the PC is waning. We believe it is evolving."
– Steve Jobs, Apple CEO

was a major player, with its Internet-ready iMac released in late-1998. With the maturation of the Internet, some analysts and insiders believe that the appeal of personal computers is waning. Jobs disagreed that PCs are becoming "boring".

"We think the personal computer is on the threshold of entering its third great age: the Age of the Digital Lifestyle," he told the suddenly hushed crowd.

"This age is spawned by the proliferation of digital devices everywhere: DVD players, MP3 players, mobile phones, handheld organizers, digital cameras, digital camcorders, and more," gushed Jobs.

15 per cent of all cameras sold in the US last year were digital cameras, he pointed out. "That'll be 50 per cent in a few years," he prophesized.

Jobs talked about the Mac's advantages over digital devices. Macs, he said, can run a larger screen for better user interfaces, burn CDs and DVDs, offer inexpensive storage, and can access the Internet at any conceivable speed.

"Macs can become the digital hub of our evolving digital lifestyle, adding tremendous value to our digital devices," he claimed.

Convergence is here

Writing in the *San Jose Mercury News*, personal-technology editor Mike Langberg says: "The melding together of what were once separate technologies – a trend techno-pundits grandly call convergence – is really happening.

"Many future PC tasks – such as supervising home networks and automatically downloading music in the middle of the night – will require computers that run 24 hours a day without complaint, " said Langberg.

"Apple is the only company that can do all this stuff under one roof," explained Jobs.

Uniquely in the PC industry, Apple creates the hardware, operating system and many software packages for its platform, and intends leveraging this position to capture market share.

As a hub, the Mac would serve these interconnecting devices, offering "breakthrough" software to make them "ten times more valuable".
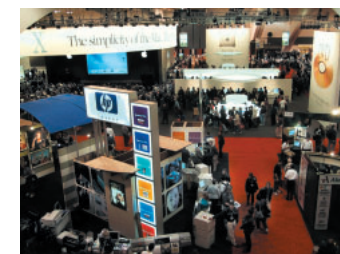
To reinforce his point, Jobs discussed Apple's successful iMovie digital video-editing program as adding "tremendous value" to digital camcorders.

Jobs then introduced iTunes and iDVD, two software solutions built to bring the company's technologies to the heart of the digital lifestyle. iDVD, he said: "Adds dramatic value to consumer DVD players."

Jobs revealed that Apple is currently working on other related software projects, but offered no details. Both iTunes and iDVD further explain Apple's decision to put CD-RW and DVD-R technology into its professional Power Mac G4 desktops.

Jobs was candid in his response to analysts complaints that Apple had lost sales because of its read-only CD drives: "We're late to this (CD-RW) party," he said, "but we're here now."

On Apple's vision, Canon PR manager Michael Virgintino said: "Apple has strengthened its position as a leader in pushing the digital revolution.

"Without Apple, many people who now think nothing of editing digital video on their PCs would never have made that step."

Industry consultant Richard Doherty said: "iDVD will revolutionize the Apple platform for post-production houses, schools and corner copy-centres."

Jobs' vision offers a new agenda for software development by Apple – to develop solutions for its platform that will add value to all a manner of digital devices.

"This is where we're going," Jobs announced as he finished expounding his vision. "iMovie, iTunes, iDVD – these applications and others like them are our passport into the new digital arena." **MW**

Jonny Evans

Apple's PowerBook G4 outguns Sony's Vaio

Some people think the Sony Vaio is the sexiest portable around," said Steve Jobs as he took the wraps off of Apple's new PowerBook G4 at San Francisco's Macworld Expo. "We don't anymore. Today, we're introducing a totally new PowerBook."

"Stronger than steel and lighter than aluminium" the 99.5 per cent pure-grade Titanium PowerBook G4 ships in 400MHz and 500MHz models. One-inch thick, Apple's pro-portable weighs 5.3lbs (2.4kg).

The airplane-engine-grade Titanium-encased Mac laptop offers "ultra-wide" 15.2-inch, active-matrix TFT (Thin Film Transistor) widescreen displays, with a full-complement of connectivity options and a slot-loading DVD-ROM drive. The monitor runs with a native resolution of 1,152-x-768 pixels – compared to the 1,024-x-768 of the PowerBook G3 and Sony Vaio Z600.

IrDA (infrared) protocols are supported for fast file-transfer between PowerBook and Mac-friendly digital devices, including Palm OS handhelds. The Titanium PowerBook has S-video and Composite video out ports – so DVDs can be relayed to a standard TV or video projector. It has a full-sized keyboard, which Jobs called "the best keyboard we've ever shipped on a portable". Its two USB ports and single FireWire port offer access to compatible third-party peripherals. The laptop carries two built-in 16-bit CD-quality speakers with an integrated omnidirectional microphone. Available with either 10GB or 20GB drives, a 30GB drive is available as a build-to-order option from the Apple Store.

Looks and performance

The new design has no media bays – users attach peripherals through the built-in USB and FireWire interfaces. And Apple has inverted its logo on the lid, so that it doesn't appear to be upside-down when viewed from the back.

The closure catch is magnetic, and locks into place only when the PowerBook is closed; otherwise it nestles into the body of the computer, so the chance of catching clothing against it is greatly reduced.

The product has blatantly been developed by Apple to recapture market share in the pro-portable space, and to steal some more from Sony. In look-&-feel it competes with Sony's Vaio series. Jobs praised Apple's new aspirational Mac: "We think the Titanium PowerBook G4 is absolutely where it's at for power and sex. It's a whole new way of thinking."

The 400MHz PowerBook G4 costs £1,899; the 500MHz model costs £2,499 (both prices exclude VAT). The new PowerBooks should be shipping in limited quantity now, but are not expected to ship in volume until mid-March, 2001. Apple received over 20,000 orders for its new pro-portable within 24 hours of its announcement, according to a report from Mac News Network.

"We've been working on this for a while," smiled Jobs. **MW**

Jonny Evans

■ *Read Macworld's extended preview, from page 76.*

Expo news

New DVD iMacs are rumoured 'this spring'

Apple will announce a revised iMac range at Tokyo's Macworld Expo on February 22 – if its recent action to cut two current high-end models is followed, as expected, with better-featured models.

Following Apple's revision of its professional Macs at Macworld Expo San Francisco, analysts suggest Macworld Expo Tokyo would be an ideal opportunity to revamp its consumer line-up.

US reports claim that certain iMacs have been declared "end of life" by a number of retailers – including the giant CompUSA – with dealers expecting new models.

In the US, Apple is offering additional rebates (up to $300) on its iMac DV+ and iMac Special Edition models – while one US retailer is increasing its own rebates as it tries to clear excess inventory to make way for new models.

UK dealers report no shortage of iMacs in the dealer distribution channel, but agree that new machines could drive increased sales.

The Japanese market is responsive to portable computers and digital devices. For the Mac to be accepted as the "digital hub" (see pages 18-19) it's essential that Apple captures market share in Japan.

The specifications of these new iMacs are not yet known: possible enhancements include G4 processors, and slot-loading CD-RW drives or maybe even SuperDrives. The SuperDrive, however, is not available in slot-loading format, which would mean a return to the Cd-tray format drive.

Any new breed iMac will ship with Mac OS 9.1 initially, though OS X would ship as standard from July. iTunes and iMovie2 will also be installed as standard.

Visit **www.macworld.co.uk** for news from Tokyo as it emerges. **MW**

Apple revamps Power Mac G4

Mac Fest

The spring MacFest roadshow events begin March 13-14 at the Novotel, Hammersmith, London. The second event takes place on March 16 at Manchester's Contact Theatre. More events are promised over the next year.

Organized by MacLine, AppleOnline and Macworld, the events will showcase new Mac technologies and feature an extensive seminar program. Show exhibitors include Macromedia, Adobe, Hermstedt, HP, Microtek, Umax, FileMaker, Formac, LaCie, NEC, Wacom, Mitsubishi, Oki, Macally, Symantec, Canon and Media 100. Distributors include Computers Unlimited, C2000, Softline and AM Micro.

www.macfest.co.uk/register

Apple has launched a new generation of Power Mac G4 professional desktop systems, with processors running at up to 733MHz. The 466, 533 and 667MHz models ship with CD-RW drives pre-installed. The top-end 733MHz model ships with Apple's new SuperDrive combination CD-RW DVD-R drive that can read and write DVDs for playback in consumer DVD players, as well as read and write CD-RW discs.

Hard-drive sizes reach up to 60GB, maximum RAM is 1.5GB. Each carries a single 4x AGP (up from the previous 2x) slot, and four (up from three) PCI slots. New graphics-card options include the new nVidia GeForce2 MX graphics card (see page 33).

Apple also demonstrated its new Disc Burner CD-recording software, which makes CD creation a simple matter of drag-&-dropping files onto blank discs. "This is how it ought to work," said Apple CEO Steve Jobs, pouring scorn on Toast and other third-party CD-burning software. (See review, page 82.)

Only the mid-range 533MHz model features more than one processor as a build-to-order option. Explaining this, Jobs said: "If we'd waited for an acceptable volume of 733MHz PowerPC G4 chips to power multiprocessing Macs, we would have had to wait till April."

During the keynote, Apple demonstrated a single 733MHz G4 running a Photoshop-based speed trial against a 1.5GHz Pentium 4 Windows workstation. The Mac ran 33 per cent faster. "This highlights the megahertz myth," Jobs said. **MW**

■ *Read Macworld's reviews and Lab tests, from page 76.*
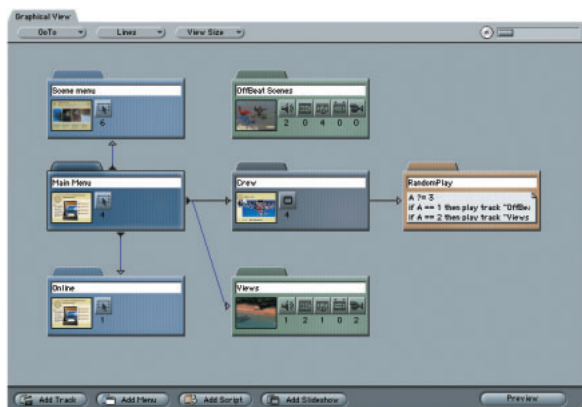
Packaging a punch
DVD Studio Pro (left) and iDVD (right) join iMovie 2 and the new top-end Power Mac G4 as part of Apple's unique solution for pro-quality DVD creation.

Apple in DVD vanguard

Apple has announced two products designed to build upon its market advantage in consumer and professional desktop video – iDVD and DVD Studio Pro.

Introducing the new products at Macworld Expo, Apple CEO Jobs enthused: "These new products are the completion of a personal dream I've had for several years now.

Jobs said: "There are as many as 13 million DVD players in the US, and the number is doubling every year.

"We want you to be able to make DVDs of your movies and be able to play them on consumer DVD players.

"Our scientists have made a

breakthrough. Using Velocity Engine, they've developed products that reduce the time it takes to write a DVD using a software solution."

Jobs revealed that previous generations of software-based DVD-burners have taken 25 times the duration of the source material: Apple has now cut that to two times. "Software encoding of a one-hour DVD would once have taken all day," he said. "Now it takes two hours."

DVD for the masses
Until now, claimed Jobs, software-based DVD-authoring alternatives have been inefficient. Professional-quality DVD-encoding required hardware that cost in excess of £4,000 to set up.

The software-based DVD-authoring solution will ship with the top-of-the-range 733MHz Power Mac G4, and will be complemented by the SuperDrive, which can read and write both CDs and DVDs.

DVD Studio Pro has been developed to meet the needs of high-end, professional DVD encoders at a ground-breaking price-point of £706 (ex. VAT).

"iDVD and DVD Studio Pro maintain Apple's lead in the desktop-video revolution," said Jobs. "Our new Power Mac G4 running iMovie, Final Cut Pro, iDVD and DVD Studio Pro offers professionals and high-end consumers the only integrated solution for pro-quality DVD creation."

iDVD is easy to use, as its authoring and set-up abilities are accessed through a single window. It supports drag-&-drop, and ships with

a number of themes. It can convert iMovies and QuickTime files and pictures into the format required for DVD using iDVDs fast MPEG encoder.

It will also create menus, buttons and backgrounds using user-defined images, and offers a choice of a dozen themes, each with pro-designed background images and fonts.

DVD Studio Pro offers a more complex set of features. It encodes video into MPEG-2, and can encode audio in Dolby Digital, the formats of choice for DVD professionals. It also lets DVDs be customized to include slide shows of still images, or motion menus from layered Photoshop files or video clips.

DVD Studio Pro will be available in February from the Apple Store or through Authorized Resellers.

All-in-one Macs
Jobs added: "Our new products will let you shoot footage on your camcorder, make movies on your Mac, and burn your own DVD."

Apple also announced its range of 4.7GB DVD-R media, available in March from the Apple Store in packs of five. UK pricing has not yet been set. Each $10 disc can hold one hour of high-quality video and is compatible with most consumer and computer DVD players. MW

Mac sound Blaster off

Creative Labs (www.europe.creative.com) will ship its first Mac-compatible Sound Blaster card, Sound Blaster Live! soon.

The Mac-friendly board will offer a MIDI port, microphone in, line in, digital out, speakers and headphones out and rear speakers out connections. It will support two- and four-channel audio

Creative's card will introduce Macintosh users to four-channel audio and EAX (Environmental Effects) technology, which simulate different environmental effects. When the card ships, games will be able to use four-channel audio on the Mac. The card will initially only be available online in the UK.

iTunes hits MP3 high note

During his Expo keynote Apple CEO Steve Jobs introduced iTunes – and criticized other MP3 applications for their complexity. He called iTunes the "easiest to use jukebox software on the market".

iTunes was downloaded 275,000 times in the week following its announcement.

It can play and it extracts MP3s, manage MP3 collections, tune in to Internet radio stations, and search for tracks online. The application's facilities can be accessed through one window, and extracts tracks from CDs at 8.5-times regular speeds. It also provides a full-screen psychedelic visual representation of sound, which moves in time to the music. It can burn audio CDs with a single click.

Of the new product, Apple CEO Steve Jobs said: "Apple has done what Apple does best – make complex applications easy."

The US English iTunes is available for free download from (www.apple.com). It needs Mac OS 9.0.4 or 9.1 and will ship with all future Macs. The International-English version is promised in February. MW
Jonny Evans

Claim that tune
Apple's OS X-inspired Aqua interface offers clear, clean track-organization features.

FreeHand leads way on X

iForce power

PowerLogix has delivered the iForce 400 and 500MHz G3 processor upgrades for older 233, 266 and 333MHz iMacs. iForce 400 costs £259, and the 500MHz £409. PowerLogix products are now available in the UK exclusively from AM Micro (01392 426 473).

Movie Premiere

Want to attend Adobe's Premiere 6.0 launch party at Sound, Leicester Square, London on February 28, 2001? *Macworld* has three pairs of VIP tickets to the party. All you have to do is write a 30-50-word concept for a movie about a futuristic war between Apple and Microsoft. Email your movie synopsis to editor@Macworld.co.uk by 22 February.

Winners will be informed by email, and tickets will be on the door.

Macromedia presented Mac OS X-native versions of FreeHand, Dreamweaver, Fireworks and the Flash player during CEO Rob Burgess' keynote speech at Macworld Expo.

Macromedia demonstrated the improved performance of FreeHand in Mac OS X. Artwork in FreeHand does not need to redraw after palette boxes are dragged over on-screen images. FreeHand will be the first Macromedia application released for OS X.

Macromedia is also working on a version of Shockwave Player that supports Intel's 3D streaming format (see *Macworld*, September 2000). Kevin Lynch, president of Macromedia products, showed how a fully interactive 3D object can be rotated and viewed in the player. "We think this is a great way to deliver 3D content on the Web," he said.

Macromedia demonstrated the interoperability between Dreamweaver Fireworks Studio and UltraDev 4.

"We're seeing teams of people building Web projects," Lynch said, "so we're trying to make our products work better together."

Burgess discussed online advertising: "A lot of people think advertising on the Web sucks, and they're right for the most part."
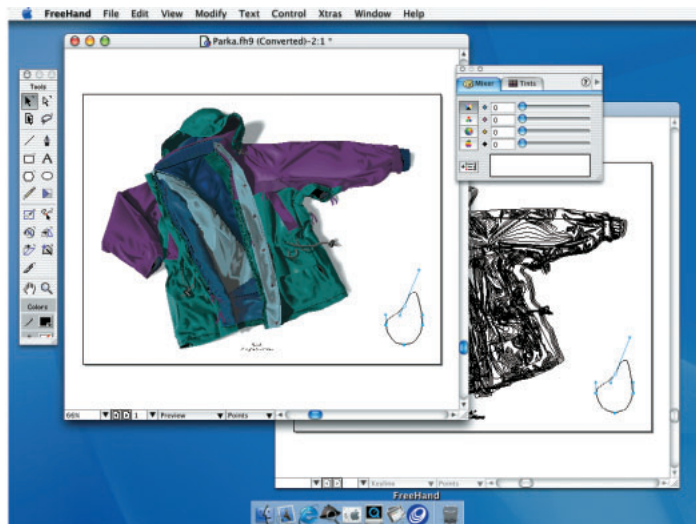
Fast forward
Freehand is faster in Mac OS X and will be Macromedia's first product for Apple's new OS.

Burgess then announced Macromedia's Flash Advertising Alliance. This consortium is dedicated to establishing standard industry-wide practices for Flash implementations, improving the user's experience and helping build better advertising online.

The first creation of the alliance is the Macromedia Flash Tracking Kit, which provides a standard way to easily track click-through rates and other elements of Flash-based ads.

It's available for free download from www.macromedia.com/solutions/richmedia/tracking.

Macromedia also announced a series of new Mac-focused courses from the Macromedia University. (www.macromedia.com/university).

Since Macworld Expo, Macromedia has announced plans to merge with ColdFusion developer Allaire in a $360 million deal. The merged company will retain the Macromedia name, and Rob Burgess will become CEO of the new group. MW

Microsoft Mac-unit embraces OS X

Microsoft introduced its previously PC-only Outlook email client and demonstrated a Carbonized version of Office running on Mac OS X. Outlook 2001 for Mac is available now as a public beta from Microsoft's Web site.

The final version will ship this summer. Fully compatible with Exchange Server, it uses the same data file-formats as Outlook for Windows for cross-platform workgroups. The application is easy to install, and blends the look of Office 2001 and the OS X Finder. Outlook is a powerful email, calendar and scheduling manager that's well-established on PCs.

Kevin Browne, manager of Microsoft's Mac Business Unit, said: "Microsoft loves OS X, or at least our division does. Other people in the company may be sweating a little bit.

"Carbonizing Office 2001 will give us the opportunity to make the programs work much better on the Mac OS. The development team is stoked about creating the aesthetics of the OS X interface for the next Office."

The Carbonized version of Entourage is more refined in appearance, and Browne said the next version will include several new features, but would not go into specifics.

He said: "We're going to do some great things with OS X.

We're also going to put a lot of effort into performance."

Browne showed Word running under Mac OS X, in which it displayed clean font-alignment and spacing, as well as intuitive font-management.

He also demonstrated how a QuickTime movie playing on a Word page pours fluidly into and out of the Dock. "Our other apps aren't as far along," he admitted.

To help with Apple's bid to entice users over to Mac OS X, Microsoft will offer a limited-time upgrade price ($149 in the US) for Office when the suite ships in autumn, he said. "These are just the bare beginnings," Browne said. "At Macworld in July we'll be able to show you stuff that will knock your socks off." MW
Joe LiPetri
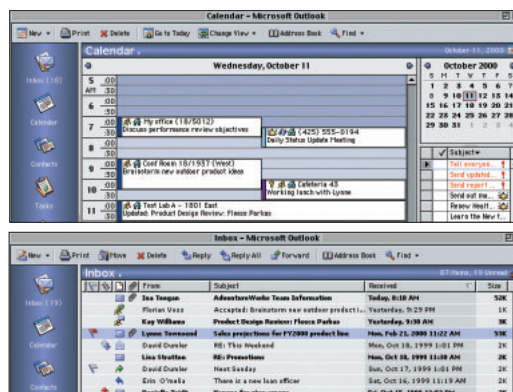
Outlook rosy
Microsoft's Outlook for Mac boasts Entourage-like personal-information management for cross-platform networks.

Mac OS X revamp wows users

Aqua Mac OS X Server to follow

Woo-hoo! The Apple menu joins OS X party
After receiving 75,000 pieces of user feedback, Apple has listened to its users – returning old Mac OS favourites to its forthcoming system .

Though the desktop version of Mac OS X has been in the limelight, Mac OS X Server – an industrial-strength version of the operating system designed for Web, mail and multimedia serving duties – will receive a technical and cosmetic facelift early this year.

Early users have reported that the software has carried the "OS X Server 2.0" name during its beta cycle, but Apple representatives have confirmed that the final version will be called simply Mac OS X Server when it is released later this spring, possibly a month after the desktop version of OS X ships on March 24.

The operating system will inherit the Aqua interface and integrate features of both earlier versions of OS X Server and Apple's previous file, print, mail and Web services package, AppleShare IP.

Tools and features added
Users reported that the next version of OS X Server will extend features and administration tools inherited from early editions of the operating system, such as NetBoot, QuickTime Streaming Server, and WebObjects, adding a DHCP server, a basic IP firewall, support for the upcoming WebObjects 4.5.1 and Java-based WebObjects 5.0 (complete with a WebObjects 5.0 runtime environment) and more.

From AppleShare IP, OS X Server will gain new (and OS X-native) versions of the Network Assistant, Network Admin and Macintosh Manager tools, as well as various file services. In addition, OS X Server will have an "advanced Directory Services architecture," said an Apple representative, that will use either the built-in NetInfo directory system or standard LDAP servers. Also in the next version of OS X Server will be Samba for sharing files with Windows-based clients, full support for Perl and CGI as well as Apache and new extensions for it, including the ability to cache static pages.

Apple declined to comment on pricing, or whether OS X Server would be available as a package to install over the desktop version of OS X or solely as a stand-alone OS, though beta testers have reported evidence of the former.

Comments from those with hands-on experience with demos of the new server operating system have been positive, especially in contrast to the software's speckled history.

"I'm really quite excited by OS X Server," said Scott Anguish, editor of the Stepwise Web site and a long-time developer. "I had originally planned on just running OS X for my servers since I didn't think I'd need the extra features… but the extensions that have been made to Apache (caching of static pages, is a big one) really does make it attractive."   Daniel Drew Turner   **MW**

After almost 10 years of waiting, we now know the release date of Apple's next-generation operating system that will take the Mac OS on to a new level of performance and stability. Forget the interminable delays of Copland, Pink, Taligent and Rhapsody – on March 24, Apple starts shipping the full non-beta release of Mac OS X.

Mac OS X will cost $129 – about £89, although no UK price had been set at press time.

During his Macworld Expo keynote in January, Apple CEO Steve Jobs showed off a much-refined version of Mac OS X that featured many changes inspired by user feedback from the Public Beta version of OS X released last September. Apple claims that it received 75,000 pieces of feedback from the 100,000 beta copies sold. Jobs called this a "stunning success".

Jobs described the feedback as split three ways. Clearly, he was happy with the positive responses that the OS X beta received. He claimed that many users found the Unix-based system "far more stable than even OS 9", and the Aqua user interface "incredible". Users were also pleased that the Classic environment – where OS X runs non-optimized Mac OS 9 applications – "really works".

He then addressed the second bunch of feedback that moaned about features missing from the Public Beta – for instance, printer drivers, location manager and AirPort support. All of these have now been added to the full release.

The third set of user responses to OS X were negative. Users were upset by the dumping of traditional Mac OS favourites, such as the Apple menu and menubar clock. The crowd whooped for joy when Jobs said that these Mac OS stalwarts have been reinstated to the new system.

The OS X Public Beta relegated the Apple icon to a useless ornament in the middle of the menu bar. Now it's back on the left side of the screen, where it remains available to all running applications.

The new Apple menu is reserved for resources that are available systemwide. Apple has also added several commands: Sleep, Restart, Shut Down and Log Out. You can now access Location Manager, Dock preferences and System Preferences panel. In addition, there's a new Force Quit menu option, which – with OS X's protected memory capabilities – closes a misbehaving application without crashing the system.

Another major complaint was with OS X's Finder, which displayed a fixed set of quick-access folder and command shortcuts in a toolbar. The toolbar was too big and uncustomizable, cried the users. Apple responded by dramatically reducing its size and allowing users to add their own commands and folders to the toolbar. Users can now also decide whether these shortcuts are displayed as text only, icons only or both.

As you can see in the QuickTime movie on Apple's Web site (**www.apple.com/macosx/theater/finder.html**), when you choose the Customize Toolbar command in the Finder's Application menu, the Finder displays a palette of commands and folders

(including folders you've created) that you can then drag to the toolbar. Available commands include New Folder, Back, View options, Eject, Find, Connect (to server) and the Customize command itself; clicking on the icon executes the related command. You can also restore the default set of commands and folders.

You can turn off the toolbar by clicking on a small oval in the upper-right of the screen. Doing so causes the Finder to revert to its pre-OS X folder behaviours, in which you can open folders without automatically closing the currently active one.

Dock duties
Lack of customization was also at the root of many user complaints about the new Dock, where applications, system preferences, documents and files are stored for easy access.

Apple has revamped the Dock so that it acts more like the classic Apple menu by letting you navigate the hierarchical contents of folders or drives that you've placed there via sub-menus. If you place the cursor over a docked folder and hold down the mouse button, the folder's contents are displayed as if you had placed an alias in the Apple menu. Dragging a drive to the Dock has the same effect. You can also navigate to folders nested within the docked one – up to five levels deep, according to OS X product manager Ken Bereskin.

In a similar manner, applications can now display options when you hold the mouse button over a docked application icon. For example, the Internet Explorer icon displays open windows, as you can see in Apple's online QuickTime movie (**www.apple.com/macosx/theater/dock.html**). System preferences in the Dock now provide quick one-click access to settings. However, one classic OS feature that has not made it to OS X

(Above) Mac OS X – how it looks now
The Apple menu has returned to the left-hand-side of the menubar in the release version of OS X. Apple has also added hierarchical submenus to the bottom-of-the-screen Dock.

(Right) Expo X men
(From left) Apple head of design Jonathan Ive, Maya Technology director Richard Kerris, and Apple CEO Steve Jobs together on the Macworld Expo show floor.

is the Application Switcher – the Dock still rules supreme here.

Jobs called the Dock a "very active place", and showed how OS X now actually plays moving QuickTime movies within it.

It's your Finder
Jobs said that many users loved the old Finder and its ability to let you place hard drives and other media to the desktop; they were angry that, in OS X, Apple was forcing them to better order their folders and files.

"People love the new Finder, but some liked the old Finder," he said. "If you want to litter your screen, you can do it."

Application avalanche
Jobs claimed that over 400 Macintosh developers are working on OS X-optimization (a process known as 'Carbonization'), involving 1,200 brand-name programs – of which 350 are ready now. He predicted hundreds more this spring when OS X ships, and "an avalanche of Carbonized

apps this summer" in time for July's Macworld Expo in New York.

One of the major coups for Apple is the OS X version of Alias| Wavefront's Maya 3D application, which was demoed during the Steve Jobs keynote. Maya Technology director Richard Kerris told the crowd that "OS X performs like a champ". (See page 30 for more on Maya.)

At Macworld Expo, Adobe, Macromedia and Microsoft announced their support of the new OS (see page 23). Corel announced that in future all its creative Mac products would be Carbonized for Mac OS X. Quark has promised QuarkXPress 5.0 for Mac OS X as a release following the Classic version of XPress 5.0. FileMaker demoed FileMaker Pro for Mac OS X.

Dantz demoed its Retrospect backup program for the new OS. Various hardware manufacturers promised Mac OS X-compatible device drivers to ensure printers, scanners and drives work with OS X.   **MW**
Simon Jary & Stephen Beale

X default OS on Macs 'this summer'

Many users will wait until their favourite applications and printer drivers are Carbonized before upgrading to Mac OS X. But Apple is to push the new operating system into work earlier by making OS X the default operating on all Mac systems from "this summer", according to CEO Steve Jobs.

That means that if you buy a Macintosh – be it iMac or PowerBook G4 – after summer, you may have to rely on the Classic environment to run your favourite Mac OS 9 applications. OS 9.1 will run as the Classic OS.

Stands to reason
Apple had a high-profile presence at the BETT 2001 show – in line with its drive on educational sales.

Apple showstopper

Apple announced imminent updates to the UK versions of its Apple Learning Series (ALS) titles at BETT 2001 (www.bettshow.com), the educational technology show that took place at London's Olympia from January 10-13. ALS is an integrated collection of software and curriculum content, both for teachers and pupils.

Apple's regional education manager Paul Scott said: "The individual packages in the series are in transition. We can expect an update within the next month".

Brendan O'Sullivan, Apple UK's director for education in Europe, added: "The next phase of ALS will see incorporation of online data with links to CD-based data."

Apple 'will evolve'
"An integral part of the ALS is that it is being bundled with Apple hardware at a discount price for the education market. Apple will continue to evolve this as we move forward," O'Sullivan told *Macworld*.

He added: "Apple is now a key exhibitor at BETT. We add value to the show with our award winning products."

Apple's show booth focused on iMovie 2, AirPort, Learning Series 3, Mac OS X and Final Cut Pro. A separate product showcase area demonstrated Apple's latest software and hardware solutions.

"We are one of the few companies offering creative solutions to education and learning. We are developing Apple's presence in the UK education market from infant to primary school right through to higher education. Schools are not only interested in Apple Learning Solutions, but in Mac OS X."

Apple had a high profile at the show. Working with Cisco Systems, it streamed the event-opening speech by Michael Wills MP, under-secretary of state for learning and technology.

Apple products were highly visible, with iMacs, G4s and Power Macs on every other stand. Apple supplied iMacs for the teacher's lounge and the Cybernet Café.

Scott said: "We lend exhibitors an iMac and offer them the opportunity to buy it at a 30 per cent discount."

BETT 2001 moved away from its primary education roots to embrace higher and further education and inclusive learning. Educational developers for the Mac at BETT 2001 included Sherston (www.sherston.com), which launched Hide and Reveal, a £31 light-hearted maths application.

Russel Mabon, managing director of Sherston, said: "BETT is our biggest show of the year. We've had hundreds of people pass through our stand, from LEA advisors to teachers."
Dominique Fidéle

Praise for iBook and AirPort

Apple's iBook and AirPort technologies picked up three awards as a joint solution at BETT: the EInnovation award for the most innovative product of the year; the EBest Information Communications Technology (ICT) hardware award for secondary schools; and the Best Judges Award – presented to the overall awards winner.

Brendan O'Sullivan, Apple's director for education in Europe, said: "This is a great accolade, and shows we are on the right track."

There were 400 nominations in 15 award categories.

Expo lesson for Apple

Despite its claims to the contrary, Apple is failing to take the initiative in the education sector, say US-based teachers visiting Macworld Expo in San Francisco.

Apple's mission on education is spelled out in an open letter in the education section of its Web site. In it, Cheryl Vedoe, vice president of education marketing, says: "Apple's commitment is to ensure that schools have the right products and solutions to support the entire education community – students, teachers and faculty, administrators, and parents. Our goal is to help prepare today's students for the real world of tomorrow, and to help each child reach his or her full potential."

But teachers told *Macworld* this aim is getting lost between Cupertino and the classroom.

Jack Jarvis is vice principal and technology co-ordinator at Lane Elementary School in Fresno, in central California's San Joaquin Valley. His school teaches 980 pupils aged between 5-13.

Knocking on wrong doors
Jack said: "In central California, Apple recently lost one of the state's biggest school districts to Microsoft, because Microsoft went to the district administrator to demonstrate how its products can be used in the classroom.

"Apple needs to start sending in its reps to talk to district administrators instead of school tech guys. It's approaching the wrong people."

He added: "Apple also comes up with some cool stuff, but doesn't let schools – and sometimes even the public – know about it.

"Take iTools. I thought this was launched at the Expo, but discovered it's been out for ages. For me, it was the best thing at the show. Our school can use it to post images of events such as ball games on the Internet immediately after the event. Why didn't Apple push it?"

Another teacher trawling the Expo halls was Bill Whicker, a 40-year-old teacher and technology co-ordinator for the 500-pupil Craig City School District on Prince of Wales Island, 75 miles off the coast of south-east Alaska.

Bill says: "I've been technology co-ordinator for 17 years. But it was only in 1999 that I received any training, when I was sent on a state-funded five-month IT internship.

"If teachers do not use the technology that they have, then it is pointless having it. When I was training in Ohio on my internship I visited a school that had spent a fortune on technology. I opened a cupboard and it was full of printers still in their boxes. Writing cheques and buying stuff is easy. Making use of it requires training."
Sean Ashcroft

Macworld EXPO

OS X stinks, says Raskin

It's official. Mac OS X stinks because Apple CEO Steve Jobs has never understood computer interfaces. Who says so? None other than the originator of the Macintosh, Jef Raskin. "I used the Mac OS X beta and, although Unix is very elegant, Mac OS X stinks," Raskin told *Macworld* at the Macworld Expo in San Francisco. "The major flaw is that Apple missed the opportunity to be different. The message I have for Apple is 'It's the interface, stupid.'

"Steve Jobs has never had a deep understanding of interfaces. His speciality is surface appearance. The fact Apple is putting a different skin on its interface is an irrelevance to me. It's not a fundamental thing." Raskin was at Macworld Expo in his capacity as a consultant in the development of Matias' new Half Keyboard – but he's better

known as the man who in 1979 created the Macintosh Project, naming it after his favourite eating apple, the McIntosh.

He first met Apple CEO Steve Jobs in 1976, when Jobs was working out of his parents' garage with Steve Wozniak. At the time, he was a professor and computer-centre director at the University of California and a visiting academic to Xerox PARC (Palo Alto Research Center). He told Jobs and Woz about PARC's revolutionary work on computer user interfaces and, in 1978, became Apple's 31st employee – leaving the company in 1982.

Mac the niche
Raskin said: "The thing that made the Mac a success in the first place is that it was easier to use and that it did more than anything in the computing world. Now OS X is indistinguishable from a user point of view from all other user interfaces on all the other platforms.

"Macs are niche products, with a 5-10 per cent market penetration. Apple produces lovely boxes and special stuff for niche markets, which is fine if it wants to remain a bit player. If it is to go after the

90-95 per cent of people who don't use a Mac then it has to rethink its interface – because the truth is, once you get past the pretty boxes, there's no difference between Macs and PCs."

But Raskin – now a computer interface consultant – reveals that Jobs is unlikely to turn to him for advice.

"I've known Steve for a very long time. He knows what I think, but gave up listening to me a long time ago. When Steve makes his mind up to stop listening, then no one can change it," he said.

Raskin added: "All current operating systems, including OS X, are a mistake. Users shouldn't even have to see the interface. It's not interfaces that let you get work done, it's the apps they open. People get work done despite operating systems, not because of them."

Of Apple's Expo product announcements, Raskin said: "I currently use a PowerBook G3, but the new PowerBook is dynamite and I'm going to buy one.

"This is the point I'm making. I don't want Apple to go out of business, because I want to continue using its machines."
Sean Ashcroft

Movie-star Maya brings magic to Mac

Alias|Wavefront will deliver its professional-level 3D animation and effects package, Maya Complete 3, for Mac OS X in the second quarter 2001 after Mac OS X ships.

Maya was the 3D tool of choice in every movie nominated for an Academy Award this year. Richard Kerris, director of Maya Technologies, told Steve Jobs' Macworld Expo keynote crowd: "Maya is to 3D what Photoshop is to 2D." He played a film generated in Maya, which showed the immense power of the application – to a rapturous response from the floor.

For professional 3D designers, Mac OS X's multiprocessing support will benefit Maya for the Mac, enabling film-quality animations on multiprocessing machines from Apple.

Kerris said: "Maya is a huge program. With over 25 million lines of code, its bigger than Mac OS X."

Alias has received 8,000 emails requesting the port and 20,000 messages of support since the Mac version of Maya was announced. Maya renders to QuickTime quickly, and, in its final version, will offer an Aqua-based interface.

Kerris said: "From a technical standpoint, we are a complete solution. Maya offers full rendering, modelling, character-animation and a dynamic-physics system."

The physics system is customizable, with different environmental rules being applied. Effects can be applied

to all 3D elements – such as wind direction, luminescence, gravity, and object behaviours, which can be customized by project.

Maya includes an easy-to-comprehend Painting system – brushes apply colour and hue to the underlying wire-frame terrains. Brushes can also add objects such as trees, clouds or grass to animations. These behave in the manner specified in the dynamic physics model.

Images can be imported from other applications, and Maya can also take a QuickTime image and use it as a reference model. Files created by the application can be saved and worked on using Maya on other platforms. *Macworld* was told to expect Shockwave and Flash plug-ins soon after Maya's release.
Jonny Evans
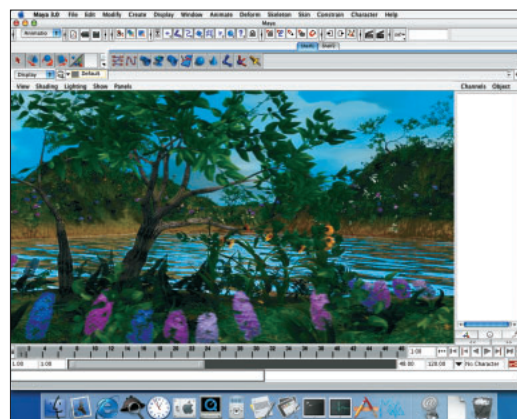
The grass is greener
In Maya, fine control can be exercised over animated elements such as the growth-rate of trees plants and flowers.

Mac gamers get Expo bonanza

Mac gaming is on the up and up, with games developers and publishers announcing a slew of key titles and strategies at Macworld Expo, San Francisco.

Influential games-developer Westlake launched two big titles for the Mac – Escape From Monkey Island and Tony Hawk's Pro Skater. Westlake is behind many of the most successful ever Mac games, including The Sims, Star Trek: Elite Force (demo on this month's cover CD) and Deus Ex. The company's co-founder Mark Adams talked to *Macworld* about its plans.

Mark said: "We're excited about Monkey Island as there have been very few adventure games released for the Mac recently. It's also the first title we've developed for Lucas Arts, and that's great for us.

"Tony Hawk's Pro Skater is easy-to-learn, but hard to master. No one is doing non-mainstream sports games, so hopefully this title will spawn another genre for gamers on the Mac. We're looking at an April or May release."

Asked what challenges Mac OS X – set for release on March 24 – holds for games developers, Mark said: "It's coming to a head for publishers. It's possible we'll see flagship titles offering OS X support at Macworld Expo in July. Once the operating system is bundled with new Macs and more users migrate to it, I expect to see more support for it from publishers.

"It depends how quickly it's adopted by users. Publishers may approach developers, asking us to create OS X ports and updaters."

Mark added: "You can expect Tomb Raider Chronicles in early spring, and we have another two or three titles that we are negotiating at present."

Softline (01372 726 333) will distribute Lucas Arts' Escape from Monkey Island – expected to cost £39 – in the UK. There is no release date yet for Pro Skater 2.

Family fortunes

Meanwhile, Mac-games publisher MacSoft aims to port a raft of family oriented games to the platform during 2001. At Expo, MacSoft announced the release of first-person super-hero title, Centipede; Monopoly Casino, a gambling twist on the property board-game; and Rogue Spear, a follow-up to Rainbow 6, the anti-terrorism shoot-em-up.

MacSoft product manager Al Schilling told Macworld: "Most iMac owners are first-time computer users, and it's important we offer them more family games, such as Scrabble and Wheel of Fortune. Over two-thirds of Mac gamers want titles suitable for family use."

The games will be available in the UK through Softline, but pricing details are not yet available.

Epic Interactive has also launched a new title, the £20 fantasy adventure Simon the Sorcerer II. The company's second UK release – the strategy game Earth 2140 – is expected in March, and will cost around £30.

Epic is planning further Mac releases this year.
Jonny Evans and Sean Ashcroft

Action stations
Games developer Westlake – behind top titles like Star Trek: Elite Force (above, top) – has developed Escape from Monkey Island (above) for Lucas Arts, while MacSoft's releases include Rogue Spear (below), the follow-up to Rainbow 6 .
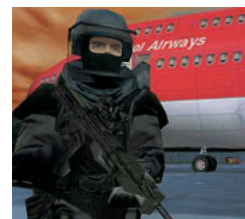
nVidia in Mac-graphics move, as GeForce hits top G4s

Graphics-chip maker nVidia has made it to the Mac, with its GeForce 2 MX graphics processor now bundled as standard in Apple's top three Power PC G4s. The company plans to make all 12 of its consumer and commercial products Mac-compatible, leveraging its own technologies and those technologies acquired when it took over 3dfx (see *Macworld*, February 2001).

nVidia's developer-relations manager Jim Black spoke to *Macworld* at Macworld Expo. He said: "Future chips will be made ready for Apple. We have tremendous resources dedicated to making our chips Mac-compliant. We offer the best OpenGL performance going, and consider Apple to be a key strategic partner. The two companies complement one another perfectly."

Reacting hours after the nVidia Expo announcement, ATI senior group product manager Matt Skynner said: "The chances of our graphics cards being bundled in future G4s is very good. ATI cards are already in 90 per cent of Apple's other machines, and our AGP 2X Rage Mobility 128 card is bundled with the new PowerBook G4. "Many people will also look to upgrade from GeForce 2 to our more powerful Radeon card."
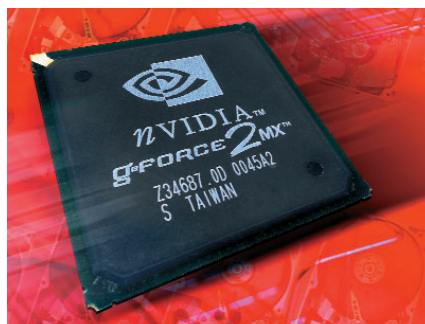
Responding to Skynner's comments, Black said: "ATI only dominates in non-updated Macs, and its claim that the Radeon out-performs the GeForce 2 MX is true only for the very highest screen resolutions. Most gamers use only the lower resolutions because extreme performance is what they're after. At these lower resolutions, the GeForce is the far-superior solution."

He also stressed that the GeForce2 MX is one of nVidia's mid-range chips, while Radeon is ATI's top-end product.

In a demonstration, the GeForce2 MX ran Quake on a PowerPC 450MHz G4 at speeds reaching 100 frames per second – the human eye can only see 30 frames per second. Black says such high-level performance is possible because the chip processes lighting and transform effects itself, rather than relying on the CPU to process the data.

"This improves graphics performance because the CPU is freed up to do other things," he said.
Sean Ashcroft

Sales-slump hits Apple profits

Apple lost $247 million in its last financial quarter – its first loss-making quarter in three years. Apple sold 659,000 Macs in the quarter, though sales remained strongest in Europe. Revenues were $1 billion, a 57 per cent fall against last year's first quarter.

Following December's profit warning (see Business News, *Macworld,* February) First Call/Thomson Financial analysts had expected a loss of $0.65 per share – Apple lost $0.73 cents per share.

"We spent aggressively on advertising and marketing to reduce our stock on hand," said Fred Anderson, Apple's chief financial officer, during a conference following the announcement. He added: "In December, we saw demand increase, particularly with consumer products."

iBook holds its own

Excepting the iBook – which, at 100,000 units, saw a 12 per cent increase in sales – sales fell for all products. iMac sales dropped 46 per cent in the quarter, and Power Mac G4 sales fell by 51 per cent.

"Our cash position remains very strong at over $4 billion, and we are planning a return to sustained profitability beginning this quarter," Anderson said. "We expect revenue for fiscal year 2001 to be about $6 billion.

"With these new products, and others in the pipeline, we believe we're well positioned for a return to sustained
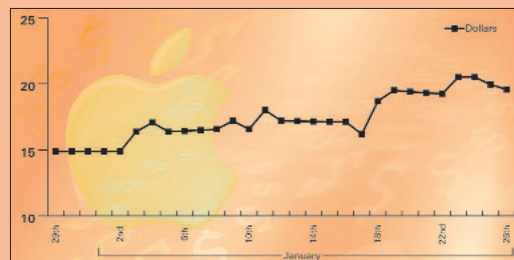
profitability. A lot of people are lusting for the PowerBook," he added. He warned that demand for the new systems could initially exceed supply.

The PowerBook was Apple's biggest earning product in Q1 2000, pulling in $267 million on 84,000 sales – sales fell 43 per cent to 49,000 worldwide in Q1 2001.

Unconfirmed reports claim that over 20,000 orders for the Titanium PowerBook G4 have been placed, exceeding available supplies.

Matt Sargent, analyst for Associated Research Services, said: "If Apple had kept prices where they were, it would've been in deeper trouble," he said.

Worldwide sales slump

Sales declined worldwide, except in Europe, where they increased by 3 per cent against the fourth-quarter 2000. Cutting profit margins to stimulate sales meant revenues fell 12 per cent.

Apple's UK MD, Mark Rogers said: "The European PC-market did not suffer the same decline as the US in sales over Christmas. The European sell-through held up pretty well."

In the Americas, Apple lost over 50 per cent of sales and revenue. Apple saw the biggest dip in Japan, where sales fell 74 per cent. Apple's global revenues fell 58 per cent over the year.

Gartner Group analyst Kevin Knox, said: "I can't say I'm surprised by these numbers, but they do show a bleaker picture than that depicted in the press."

Welcoming rumours that Apple would add CD-RWs to iMacs, Knox said: "They haven't refreshed the iMac often enough. If you own a Blueberry iMac, you're not going to buy a new one because Ruby is available.

"You have to have meaningful change to entice customers to buy, and Apple hasn't done that in many instances over the past year."

Profits prediction

Anderson predicted a small profit during Apple's current quarter (ending in March) followed by strong showings in the following two quarters. Apple's sales crisis reflects the state of the PC market in general.

Apple will release Mac OS X on March 24, and products announced at both the Macworld Expo in San Francisco and the upcoming event in Tokyo should be available in quantity shortly after the Japan show.

A recent IDC report reveals that PC sales-growth has slowed down in the face of decreased consumer demand. A total of 36.7 million PCs were sold worldwide in the fourth quarter of 2000, says IDC.

Brad Gibson and Ashlee Vance

Business briefs

■ **Macromedia returned record third-quarter revenue of $103.3 million, a 61 per cent increase over the year-ago quarter. The company also announced plans to merge with ColdFusion developer, Allaire.**

■ **A Belgian court has granted bankruptcy protection to Lernout & Hauspie, parent company of Dictaphone and Mac speech-recognition specialists, Dragon Systems.**

■ **Motorola's year-on-year fourth-quarter earnings fell by 41 per cent to $335 million. The company is also to shed 2,500 jobs.a**

■ **Wireless and network solutions specialist Proxim is to acquire Netopia.**

■ **Intel has acquired Xircom in a $748 million deal.**

■ **Warner Music is allowing MP3.com to distribute Warner-owned tracks for two years.**

■ **Palm's chief technology officer Bill Maggs has resigned.**

■ **Lexmark returned fourth-quarter earnings of $55 million net.**

■ **IBM's fourth-quarter earnings were up by 28 per cent on the year-ago figure.**

Corel ditches Linux arm

Corel is to sell its Linux distribution division, the company revealed, as it rolled out its new corporate strategy and logo. Corel CEO, Derek Burney, said: "Our future will be based not on radical choices but smart changes." Corel will continue to develop WordPerfect Office and CorelDraw for Linux.

Ian LeGrow, Corel's vice president of creative products said: "We our committed to our Mac products."

The company plans to expand the scope of its suite of creative products, and is considering "strategic investments" to boost progress in these markets. Corel also hinted at plans to expand into the Web-graphics markets. Wireless imaging was another area singled out for expansion, Burney revealed.

Once-beleaguered Corel is participating in Microsoft's .NET strategy, and customers can look forward to faster access to Web-based applications, content and services. Corel expects new and rising revenues from its .NET ventures.

Burney described Corel's plans as having a "solid foundation". He promised: "We are committed to success and believe the plan will bring Corel back into profitability by the third quarter of this fiscal year."

Corel revealed that its Macintosh release schedule is between May and September. In May, Corel will announce significant updates to its creative applications. Bryce users get Bryce 5 in May, followed by Painter 7, CorelDraw 10, Kai's Power Tools 7 and KnockOut 2.

LeGrow said: "Professional graphics and the emphasis on the Mac is a very big thing to Corel."
Jonny Evans

Product News

Toast 5 'stable', claims Roxio

Macworld EXPO

Roxio, Adaptec's spin-off software-development company, announced Toast 5 at Macworld Expo. For the first time, Toast officially allows CDs to be burnt in the background – previous versions included an "unreliable" software hack that allowed background burning.

Roxio promises that Toast is more stable, and is far more capable of maintaining constant data-rates than before – meaning fewer failed CD-authoring sessions.

Toast DVD has been integrated into Toast 5, and the program can also write to digital linear-tape.

On release, Toast 5 will run on both Mac OS 9 and OS X. Reflecting this move to Mac OS X compliance, the application sports a redesigned, Aqua-like interface – though the application's control buttons are system-generated and look best running on OS X.

The controls that once sat on Toast's second dialog screen have been integrated into the first dialog box of the application. Toast offers users three single-button controls for common tasks – such as audio, data and CD copying, with a fourth button, Other, for more advanced functions.

Another new feature in Toast 5 is its ability to use drag-&-drop for recording audio CDs and QuickTime files. This means
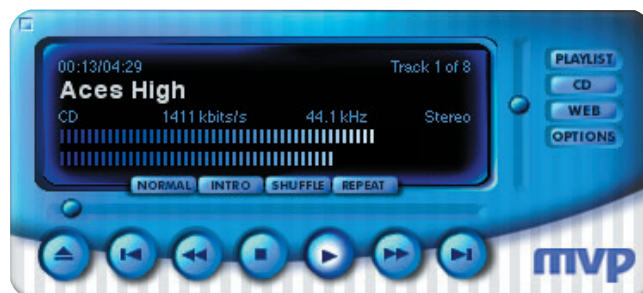
Toast can record any file-type that QuickTime understands. Toast will separate the audio from such files, and burn them to CD.

Toast 5 permits CD titling within the application, and supports Apple's Extended File System for longer file names. Toast 5 will encode MPEG files, so iMovies can be burnt to CD as Video CDs.

The application will ship with iView Multimedia, a file-management system for creating slide shows and thumbnail catalogues. Pricing was not set at press time, but it is expected to ship in April.
Roxio, www.roxio.com

First burn
Toast 5, officially a Roxio product, supports background burning, has an Aquafied interface (above), and ships with QDesgn's MP3 player MVP (top).

Optimize Web sites
PineHill Products has announced SiteToolkit 1.0, a set of Web-site tools that will optimize Web pages, generate and automatically add metatags, upload entire Web sites, and submit sites to 40 search engines. It costs $15.
Pine Hill Products, www.pinehillproducts.com

Pocket rocket
BoxClever has launched its own FireWire-enabled Pocket Drive. Weighing just 295g, the drive supports data rates up to FireWire's maximum 400Mbps. Available in 10 and 20GB versions, the drives cost £249 and £295 respectively.
Mac and More, 01442 870 300

File transportation
Aladdin is shipping Transporter, its workflow-management and file-transfer utility. It helps users set up customized and automated file-management communications and Internet tasks. Once a Transporter sequence has been set up, functions can be accessed through a single click. Sequences can include FTP-file exchanges. It costs $149.
Aladdin, www.aladdinsys.com

Sound recording app
Black Cat Systems has released Audiocorder, which works like a VOX recorder, enabling users to set the volume at which recording begins, and the volume at which it should stop. It also enables manual recording. The application works as a telephone-call recorder using the Mac's internal modem. Sound is stored in AIFF files and can be sampled at 11, 22, or 44KHz. It costs $20.
Black Cat Systems, www.blackcatsystems.com/software/audiocorder

Amapi 3D 6.0 is spaced-out

TGS has announced Amapi 3D 6.0. This includes a software-based technology called 3Space, and also adds new functionality.

Amapi 3D is a 3D-modelling program for Mac and Windows. Features include a fast-rendering engine and a set of modelling tools.

3D Space is designed to help professional designers create dynamic, interactive 3D Web-sites. It can associate dynamic behaviours to the objects it creates, generating

files in a number of Web-friendly formats, including HTML and XML. Animators can use this feature to generate collisions between objects.

Version 6 also offers a number of advance-modelling features, including elevation maps and perturbation tools.

The rendering module has been improved, raytracing has been accelerated, and the application's interface has been redesigned. Amapi 3D 6.0 costs £299.
TGS, www.tgs.com.amapi

Amapi
Amapi 3D 6.0 features improved raytracing and the ability to create dynamic Web-content.

Images have a killer bite

Royalty-free image publisher Digital Vision has launched Arc, a 30-CD collection of nature photography. The collection includes images captured from across the globe, including rainforests, mountain ranges, insects and mammals. Series titles include Life Underwater, Cats and Dogs and Summits. Arc CDs cost £349. The collection can be previewed at www.digitalvisiononline.co.uk Digital Vision, 020 7378 5555

CDs & books

Photoshop tipster
Deke McClelland's *Look and Learn Photoshop* is a fully illustrated guide to Adobe's image-manipulation solution. The book contains 300 screen-shots with 66 step-by-step examples. Topics include painting and retouching. The IDG-published book costs £18.99. All on-sale IDG titles are available at up to 30 per cent off from *Macworld* either online (www.macworld.co.uk/readeroffers) or by calling 020 7831 9252.
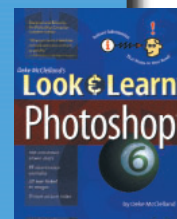
Teaching text
Sherston Software's Reading Zone is an interactive CD-ROM designed to teach pupils word recognition and to check a range of reading skills. Each activity is available at two levels of difficulty meeting National Literacy Strategy Year 6 (10-11 years) requirements. It costs £49.95 per user. Sherston, 01666 843 200

Video-editing guide
iMovie 2 – The Missing Manual from O'Reilly Press is written by *Macworld's* David Pogue, and offers a complete course in making digital video. Chapters discuss the workarounds and hidden features of Apple's video editor. It costs £13.95. John Wiley Distribution, 01243 779 777

Flashy Web skills
Foundation Flash 5 costs £22.99 and is a cross-platform guide to the basics and use of Macromedia's Web-animation tool. Dynamic Web-applications and advanced Flash skills are discussed. Computer Bookshops, 0121 778 3333

Macworld EXPO

Jaz makes way for Peerless

Iomega showed off its latest removable-storage technology at San Francisco's Macworld Expo in January – winning a Macworld Best of Show award in the process. The Peerless drive system will succeed the company's Jaz drives. Capacities of up to 20GB are promised for launch later this year, with prices starting at £170 for drives and £90 for disks.

The Peerless disk is roughly the size and shape of a handheld PDA device, such as a Palm. It slots into a base station – about four inches across and five inches tall – only slightly taller than the disk itself. Iomega claims that the Peerless drive system offers "up to ten times the performance and massively greater storage capacity than CD-RW, DVD-RAM, DVD-RW, or DVD+RW alternatives".

FireWire and USB 1.1 interface modules are expected to be available at the launch, with USB 2.0 and SCSI available as follow-on products.

The Peerless read/write heads are integrated into fully sealed, high-capacity removable disks, which eliminates the risk of dust contamination and allows sustained transfer-rates in the range of an expected 15MBps – with the FireWire-based module. The hard-drive electronics are located in the base station, making for disk prices as low as 1p per megabyte.

Iomega says Peerless is an alternative to write-once optical media for data storage, and tape drives for backup. Peerless disks include chip-based identifier technology to enable data security, protecting against unauthorized access.
Iomega, 0800 973 194

BlueChip gives PowerBook a boost

PowerLogix released its BlueChip 400 and 500 G3 upgrades for 233, 250, 266, 292 and 300MHz G3 PowerBooks at Macworld Expo. The upgrades boost older PowerBooks, offering either 466MHz or 500MHz G3 processors. They cost £449 and £519 respectively.

PowerLogix also announced its iForce upgrade for iMacs running up to 333MHz. They are available with either a 400MHz G3 processor, which costs £259, or the 500MHz G3, which costs £409. The company has also cut prices on its PowerForce G3 and G4 upgrade cards.
AM Micro, 01392 426 473
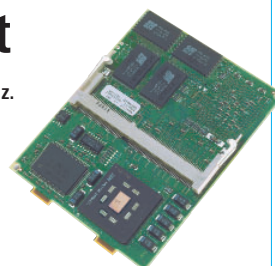
Mitsubishi readies palm-sized projector

Mitsubishi Electric has launched two new products – the LVP-SA51U LCD projector, and a palm-sized digital projector, the X30U. The company will also release a slim-line video wall-system later this month.

The £4,000 X30U digital projector weighs 1.3kg (2.9lbs) and measures 230-x-48-x-177mm. Pictures can be sourced from video or a Mac and projected at sizes from 36 to 200 inches onto a screen or wall. Projection distances range from 1.2m to 6.8m.

There is a 10x zoom facility, and digital keystone-correction. A 130W lamp produces 800 ANSI lumens brightness at a resolution of XGA 1,024-x-768 pixels and a contrast ratio of 800:1. It can show over 16.7 million colours. The projector is compatible with SXGA, XGA, SVGA, VGA, Mac, NTSC, PAL and SECAM.

Sound is output from a built-in 0.5W speaker. Power consumption is 180W. The projector can be operated by a remote control or a computer. All cables are provided.

The £2,000 LVP-SA51U uses Natural Colour Matrix, an algorithm that controls six colour signals – red, green, blue, yellow, magenta and cyan.

The LVP-SA51U has a brightness of 1,000 ANSI lumens, and an SVGA image resolution of 800-x-600 pixels. The zoom ratio is 1.2:1, while projection distances and picture sizes vary from 1.4m using a 30-inch diagonal screen, up to 14.37m using a 300-inch screen. The scanner bundles with a soft-cover carrying case, and weighs 3.4kg (7.5lbs).

The Mitsubishi DLP full XGA Display System is available from March 2001. It is a series of 40-x-30-inch screens. A video wall can be built using a number of screens. Each screen has a single-chip Digital Light Processor system that provides full XGA performance. There is one long-life lamp in each screen that lasts around 8,000 hours. The screens have a contrast ratio of 300:1 and a resolution of 1,024-x-768 pixels. Each screen costs £10,640.

Mitsubishi Electric, 01707 278 684

Pic in the wall
Mitsubishi's XGA Display System (above) allows monitors to be stacked together to form a wall-mounted array. The LVP-SA51U (left) and the palm-sized X30U (below) are the latest in the company's digital-projector range.

Canon bubble-jets ship

Canon has introduced five bubble-jet printers – the S400, S450, S4500, S600 and S800.

The £280 S800 is a photographic printer offering prints at resolutions of 2,400-x-1,200dpi. The printer has around 1.5 times as many shades per pixel than before. It outputs an A4 photo at 1,200dpi in two minutes and can print up to legal-paper size (215.9-x-355.6mm).

Also USB, the S600 delivers 15ppm (pages per minute)

monochrome, or 10ppm in colour. It offers true 2,400-x-1,200dpi. Available from April, there is no UK price yet.

The £75 S400 is a colour printer offering 9ppm and USB support. The printer can reach resolutions of 1,440-x-720dpi

The £119 S450 prints at 10ppm (monochrome), or 7ppm (colour) at 1,440dpi. It also prints legal-paper sizes.

Canon's S4500 A3 colour bubble-jet printer will deliver nine

A4 ppm in monochrome, and 6ppm in colour. Reaching resolutions of 1,440-x-720dpi the £225 printer connects via USB.

Canon, 0121 680 8062

Shining out
Eizo has released two projectors, the IP420U (below) and the IX460P. The IP420U generates 1,100 ANSI lumens of brightness while the IX460P offers 3,000 ANSI lumens. Both projectors have a horizontal scanning rate of 15-92Hz. The IP420U weighs 3.2kg, and the IX460P weighs 6.7kg. They are priced at £2,800 and £4,995 respectively.
Eizo, 01483 719 500

Painting by numbers
Painting 2 is a drawing program that needs less than 1MB RAM and features: standard paint tools; special-effects support for multiple file-formats; customized colour-sets; graphics-tablet support; and intelligent 32-bit icon creation for documents. It costs $20.
Sarwat, www.sarwat.net

Passport to photography
Sony is offering three free boxes of UPC-204A UK Passport Agency-approved photo-quality paper with the UPX-C21 digital photo-ID system. The system is an all-in-one professional-photo-ID package comprising a cordless digital-camera, a camera-control unit and a compact printer. An optional kit downloads images to a Mac. The UPX-C21 costs £1,550.
Sony, 01932 816 275

Fast MP3 encoding
Proteron's Pro N2MP3 is an MP3 encoder for the Mac. It sports the Proteron MPEG encoder for MPEG1 layer III format, and is based on the International Standards Organization source for MP3. It can encode 128Kbps high-quality MP3s faster than real time. It costs $59.95.
Proteron, www.proteron.com

Epson ships winter range

Epson, has released the EMP-8150 and EMP-9100 projectors, the Stylus Photo 790, 890 and 1290 series of printers, and the Epson Stylus Pro 5500 printer. The EMP-8150 is an XGA (Extended Graphics Array) projector offering 3,200 ANSI Lumens brightness.

The four USB-port projector can cast images stored on a PCMCIA card. It comes with network connections, and is AirPort compatible. It costs £11,999. The 2,400 ANSI lumens EMP-9100 is a low-noise (42db) projector, and weighs 8.3kg (18.3lbs). It supports global video standards (PAL and NTSC), and analogue and digital inputs. An SXGA projector, the EMP-9100 can also support signals from VGA to UXGA resolutions. The projector's keystone correction has been improved, and it now offers a 300:1 contrast ratio. It costs £10,999.

The USB and parallel Epson Stylus Photo 790 printer costs £135, has a resolution of 2,800dpi, and can print at full A4 thanks to new edge-to-edge function . The £169 Epson Stylus Photo 890 A4 printer also features edge-to-edge printing in six colours at print speeds of 9.6ppm for black text, or 9.2ppm in colour. A resolution of 2,880-x-720dpi is supported. The USB and Parallel Epson Stylus Photo 1290 is a professional A4 model, with a resolution of 2,880-x-720dpi. It reaches colour print speeds up to 9ppm.

Finally, Epson's Stylus Pro 5500 is an A3 printer with a maximum resolution of 2,880dpi and printing speeds of two minutes per print at 720dpi.
Epson, 0800 220 546

Picture perfect
The Epson-9100 (above) is a low-noise projector that supports PAL and NTSC standards. The Stylus Photo 790 (below, left) has a 2,800dpi resolution and costs £135.

LaCie launches RAID on terrabyte storage

LaCie has launched its TX12000 Ultra160 RAID Tower storage-solution. It has a 2ms average access-time, and each tower can support up to 876GB (12 drives).

The product is aimed at high-end storage businesses, such as image libraries, e-commerce databases and ISPs. The TX12000 RAID ships with an Ultra160 SCSI controller, which can also control additional towers.

Two towers can be daisy-chained, offering up to 1.7TB (terrabytes) of storage. The controller supports five RAID configurations that can speed-up desktop video-editing and the transfer of large graphics-files. The array can be operated and set-up via an LCD display on the back of the device. An LCD-panel at the front of the drive can be opened.

All drives and the six fans are hot-swappable. The TX12000 is enclosed in a dark-blue case and the modules have "easy-to-grab" handles. The TX1200 Raid Tower system starts at £6,154 and goes up to £19,000 for the 876GB version.
LaCie, 020 7872 8000

Flat out
NEC-Mitsubishi's 1530V is a flat-panel monitor that can show 16.19 million colours and has a recommended resolution of 1,024-x-768 pixels.

Monitor roll-out

NEC-Mitsubishi has launched the 15.1-inch MultiSync LCD 1530V. The flat-panel monitor costs £609, though it needs a Mac adaptor. It has a TFT active-matrix LCD panel with a viewing angle of 120-degrees horizontal and 90-degrees vertical. It consumes 25W of power, decreasing to under 3W in sleep mode. The contrast ratio is 200:1 and its recommended resolution is 1,024-x-768 pixels at 75Hz. The monitor can display 16.19 million colours, and is controlled through an on-screen display. It ships with a three-year on-site warranty.
NEC-Mitsubishi, 0845 121 9200

Apple updates
There are three major Apple updates this month. **Mac OS 9.1** emerged with little fanfare at Macworld Expo, San Francisco (see Reviews page 54). It delivers additional support for Multiple Users and iTools services, and adds an Entertainment channel to Sherlock. Mac OS X Public Beta is incompatible with Mac OS 9.1, which disables OS X's Classic environment.

Disk First Aid 8.6 verifies and repairs disk-drive problems. Intended for Mac OS 9.x, version 8.6 can repair more faults, and deals with Mac OS Extended hard-disk volumes better.

AppleShare Client 3.8.8 fixes a number of problems, including password-recognition errors. It also removes the "check for broadcast" addresses in the Enter IP Address dialog, as it was not handling AirPort-supplied addresses properly.

Links to all the most recent Apple updates are available at **www.macworld.co.uk/updates**.

Third-party updates
BBEdit 6.0.2
This update adds support for Compact HTML 2.0, a specification used to prepare content for mobile phones. Other improvements include an additional flexibility in positioning windows when finding differences between files.
Strata 3D 3.0.2
Strata 3D is a Web-enabled 3D-graphics tool that creates 3D models, images, animations and live Web-content through an "easy-to-navigate" interface. The update improves stability.
SurfDoubler 6.8.0
The application will simultaneously connect two or three computers to the Internet over one connection. Version 6.8 offers a number of new features, including the ability to combine multiple-modem connections for faster downloads, and has improved remote-control features.

Quick drums
Virtual Drummer Version 4.1 uses the built-in sound-management features of the Mac OS and QuickTime to create a "sophisticated" sound-output solution that is easy to use. You can drag-&-drop drums from a palette to add them to a set – a simple grid pattern creates the beats – and the results can be saved in a drumlet palette. Version 4.1 allows songs to be exported as QuickTime movies. It costs $15
Virtual Drummer, www.virtualdrummer.com

Flash flat panel
Iiyama has introduced a £1,355 17.4-inch TFT LCD, the AS4431D. It comes with integrated USB and speakers, a rotating screen and video and DVI (digital video interface) inputs, which eliminates the need for analogue-to-digital signal conversion. It offers a maximum resolution of 1,280-x-1,024 pixels and a contrast ratio of 400:1.
Iiyama, 01438 745 482

Back-up boon
A FireWire version of the VXA-1 tape drive has been launched. It can back up 33GB of data to a single-cartridge at 3MBps, and is bundled with Dantz Retrospect Backup Software 4.3, a 33/66GB tape cartridge, and a cleaning cartridge. It costs £1,021.
CMS Peripherals, 020 8960 6000

Canon shoots like a pro
Canon has launched the PowerShot Pro90 IS, which has a 2.6 mega-pixel resolution and uses Canon's Image Stabilization Technology. It has an optical 10x zoom lens, downloads images via USB and has a built-in CompactFlash slot. It's bundled with Adobe Photoshop LE, Canon's Photostitch, PhotoRecord and more. The camera costs £935.
Canon, 0800 616 417

Olympus cameras climb heights

Olympus has unvieled its C-2040 and C-3040 Zoom digital cameras. Both models add a large f1.8 aperture to the zoom lens, enabling the cameras to capture images in poor light conditions. Olympus claims this lens is a first for digital cameras, almost doubling the distance supported by the built-in flash.

The C-2040 (right) is a 2.1-megapixel device; the C-3040 can capture 3.3 megapixels. Both feature a 3x-zoom lens, which is upgradeable using add-on lenses. The cameras offer menu options, previously available only in high-end Olympus models – including a multi-pattern metering system (Digital ESP). The C-3040 (below) also offers a Multi-Spot metering mode that combines up to eight spot-readings to give users control of light and focus levels.

Both cameras also offer single-touch white balancing, which records the white tones under any light source. Other features common to both cameras include improved wide-view LCD displays, sequence shooting, black-&-white shooting modes, aperture and shutter-priority controls and programmed automatic or manual exposure. Both models offer a number of compression settings and the ability to capture up to five minutes of QuickTime movies and sounds. Photographers can add four-second audio notes to each image file.

Both cameras ship with an 8MB SmartMedia card, and have a USB port and cable. each requires Mac OS 8.6 or later. The C-2040 costs £510. The C-3040 ships in spring, and will cost £725.
Olympus, 0800 072 0070

Adobe ships Premiere 6.0

Adobe has launched Premiere 6.0, the latest version of its digital-video editing software. The £409 application provides support for FireWire. Captured digital-video clips can be crafted into video productions with Premiere 6.0, and then output to streaming formats on the Web.

New tools include a professional-level audio mixer, interface refinements, and new palettes and customization options. Premiere 6.0 also integrates with Photoshop, Illustrator, After Effects and GoLive. (see reviews page 50).
Adobe, 0131 458 6842

The eagle is landing
Adobe Premiere now supports FireWire.

Nikon's double exposure

Nikon has announced the Coolscan IV and the SuperCoolscan 4000 film scanners.

The scanners feature Digital ICE technology, which combines ICE (image correction and enhancement), ROC (Restoration of Colour) and GEM (Grain Equalization and Management).

Digital ICE works by reading the surface of the film and detecting defects, such as finger-prints, and then removing the imperfections. Digital ROC and GEM reduce film grain. The Coolscan IV has a resolution of 2,900dpi and USB connectivity, while the SuperCoolscan 4000 has 4,000dpi resolution and a FireWire interface.

Both scanners will ship with Nikon Scan 3.0 software and Fotostation. The Coolscan IV will also bundle with Adobe Photoshop 5.0 LE, while the LS-4000 will ship with a FireWire card. The Coolscan IV will cost £650 and the SuperCoolscan 4000 £1,300.
Nikon, 0800 230 220

Film fun
Nikon's Coolscan 4000 film scanner can correct graininess and remove dirt.

David Fanning

Mac OS 9.1 marks the end of an era – and the beginning of a shiny new one

Operating table

The release of Mac OS 9.1, not even mentioned in Steve Jobs' Macworld Expo keynote address last month, is actually a big moment in Apple history. It may well be the last of the non-Unix operating systems that we'll ever see.

March 24 will see the first of the new generation of operating systems to run on Macs. This means the end of an era that reaches right back to 1984, when the original Macintosh System 1.0 was released. I hesitate to say that there will never be another OS 9.x – even Apple has shied away from that claim. But any other release would be after the release of OS X. Actually, there is a precedent for this. Just after the release of System 7, a new upgrade for System 6 was released.

The original Mac operating system was a tiny affair, using only 216K of memory. This would be loaded from a floppy, and applications ran – mostly – from a second floppy. This is because there was no hard drive and the single-sided single-density floppy disk could hold only 400K of memory. There was no bloatware in 1984, it was a physical impossibility.

The second version of the system was released in 1985. It introduced one of the most mind bogglingly daft features ever to appear in a system, and it still remains today. That feature was drag floppy to Trash to eject. It also removed the close-all command, another questionable "advance". System 2 introduced the Printer Chooser DA. A DA, to those twenty-somethings who think System 7 is ancient history, was a Desktop Accessory – now more commonly known as a Control Panel or Apple Menu Item. So the Chooser was born, and has survived until today – bewildering the uninitiated.

The next upgrade, in 1986, was mostly to speed up the Finder, and to introduce some bugs. System 3 was quickly followed by System 3.1, System 3.2 and by the end of the year, System 3.3.

1987 saw another innovation with System 4.0. This was the first system to have built-in incompatibility. It wouldn't run on the original Mac 128K. System 4.1 followed shortly after, which introduced AppleShare but remained incompatible with the 128K Mac.

By late 1988, System 4.2 rolled around and was the first version to include the ability to run more than one application at a time. The new and optional feature was called MultiFinder. I shied away from this memory-hungry luxury. Running two applications meant Photoshop 1.0 couldn't have its full 2MB RAM.

The next year must have been one of upheaval at Apple, and System 5.0 must have been a dog. If anybody knows the real story, I'd love to know. Perhaps it fell down the back of somebody's couch. Whatever happened, before I knew it, System 6.0 was out.

Although System 6.0.1 was never officially released, it was apparently found on a game disk for Arkanoid – it isn't clear whether this was a hack by the makers of Arkanoid or a real update.

System 6.0.x was regularly updated to accommodate new hardware that was coming thick and fast now. It culminated in System 6.0.7 before the biggest update to the system to date was released – System 7. The new system heralded the arrival of a slew of features including 32-bit addressing, which enabled Macs to have more than 8MB RAM for the first time. This was mostly immaterial to the average user, because it was about as affordable as it is to fill a Mac with maximum RAM today. It also introduced QuickTime, File Sharing, TrueType fonts, Balloon Help and many other features. However, it was incompatible with much of the existing software, so publishers had to make System 7-savvy software .

For those too chicken to upgrade, System 6.0.8 was released as a final pre-System 7 operating system.

System 7 was the longest lasting of all versions, gradually working its way up to 7.6.1 over six years. It wasn't until mid-1997 that the Mac OS 8 shipped.

OS 8 finally brought a PowerPC native Finder to the Mac – four years after the first PowerPC machines were released. And the subsequent 8.1 release was the final version that older 680x0 Macs could use. 1998 brought OS 8.5 and Sherlock – which helped us find things on our hard drives and on the Internet. The Application Switcher also arrived.

OS 9 arrived with OS X already on the horizon, and after a couple of minor upgrades we're left at OS 9.1.

It's with some trepidation that I look ahead to OS X. I have upgraded countless times since I first started using a Mac. I have gone from cautious late upgrader to voracious early adopter over the years. You may think I'm reckless, but I do it for you dear readers. I'll soon be using OS X. I hope you'll all join me in what promises to be a very interesting new way of computing. MW

> "System 5.0 must have been a dog. If anybody knows the real story, I'd love to know"

Michael Prochak

Music on the Mac could create
a legion of talentless musicians
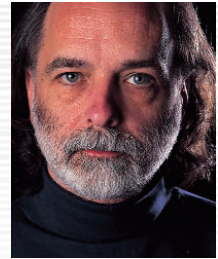
The war in NAMM

According to William Blake, the labours of the artist, the poet and the musician have been proverbially attended by poverty and obscurity. Even Milton and Shakespeare couldn't publish their own work.

However, as an "early adopter", Blake was one of the first to recognize the benefits of accessible technology for furthering artistic endeavour. In his case, it was the printing press that promised to lift poets and artists from poverty and obscurity, by providing a kind of personal access to a wider potential audience. These days, it's the musicians' turn with digital desktop-studios and the Internet.

Recently, while contemplating the savage inner workings of a criminally mis-managed multimedia course at a local college and the tragic consequences, a shadowy flashback intruded with news from NAMM (an American music show). It brought troubled visions of rows of titanium boxes racked with almost-provocative knobs sparkling with the mirrored precision of a VC's bayonet. OK... it's a poor phonetic link, but these days, the war between competing producers and the Net offensive is uglier than anything seen in Saigon.

For Mac users, NAMM showcased a plethora of cool tools for composing, performing, mixing and producing music... even, so they say, if you've never touched a musical instrument before. Out in music land, we're told nine out of ten DJs choose Macs every time. Likewise, the number of applications for recording, mixing, mastering and remixing music, for controlling musical instruments via MIDI – as well as building Mac-based orchestras full of virtual instruments, synths and samplers – continues to grow at an exponential rate.

If the reports are true, even a fairly mundane Mac will soon be able to effortlessly process over 60 tracks of audio. Propeller heads have created virtual racks of all your favourite instruments and products – such as Guitar Stomp, a VST plug-in – implying that a two-stringed broken tea bass can be turned into a pristine pre-CBS strat at the mere touch of a button.

Some resistance fighters say its enough to shift the entire balance of power in the musical war. With a high-end Mac and a selection of these goodies, no record company is safe. Before long, the fat cats will topple and a cottage industry of home production will emerge. Now, murmur the often tone-deaf dissidents, anyone, anywhere with a decent Mac can produce the next *Dark Side of the Moon*. But as Karl Marx once remarked, anyone, anywhere can also be a talentless moron. OK...so that quote is a bit of a remix.

Despite the democratization hype, there's an inherent danger in mere accessibility. We already bathe in a vast ocean of musical mediocrity and down right crap, and I personally don't even want to imagine someone like Prince William taking his penchant for deep house on to the Web. But the technology is here. In theory, all he needs is a Mac with a modem and it's please welcome DJ Will Fresh with a blistering new set from the colonies. OK... you may detect a note of cynicism coming through here. But in defence, I turn again to Marx who, after seeing the new version of Cubase VST, noted "ah ha... now everyone can use a vocoder".

Sure the Mac might help lift some musicians out of poverty and obscurity. But beware of joining the emerging legions of musical Mac-Mobys that really believe all that crap about being able to produce chart-busting tracks with nothing more than a G4 and a bag of digital tricks. Don't associate with them and don't buy their so-called music. They usually resemble coke-addled producers who had a brief brush with fame in the late eighties. Besides, if nobody's actually producing anything new and original, it won't be long before there aren't any back catalogues left to pilfer.

As with all "innovations", when it comes to music, it's all too easy to get so wrapped up in gimmicks that you miss the original point... losing the proverbial tree somewhere in the jungles near Cambodia, as it were. As Blake observed, we need to create our own systems or be enslaved by others. And no matter how good the Mac is for music, you still have to beware of letting your sequencer write your songs.

Ease of use and speed, as in nearly every other aspect of computing, have become buzz-words of a new generation of sequencer junkies. With Zen precision, notes can be jogged into place, samples re-looped to eliminate noise and a saxophone changed into a viola. But as in all aspects of digital technology, progress can be an illusion. Effects and filters just add another hurdle in the production line, and no amount of re-mixing will turn a lame song into Beethoven's 9th. Like it or not, there's no substitute for being able to play an instrument. Even the best G4 systems don't include talent. **MW**

> "As with all 'innovation', when it comes to music, it's too easy to get so wrapped-up in gimmicks and tricks that you miss the original point"

Digital-video rival to Apple's Final Cut Pro

Adobe Premiere 6.0

Publisher: Adobe   (020 8606 4001)   www.adobe.co.uk
Pros: Native DV capture; audio mixer; enhanced workspace.
Cons: No HDTV support.
Minimum specs: Mac OS 9.0.4.
Price: £396; upgrade £100 (both prices exclude VAT)
Star Rating: ★★★★/8.6

Mix master
The excellent Audio mixer can turn Premiere into a pro-level mixing desk.

It's been a long time since Adobe's video-editing tool got an upgrade – and a lot has happened since Premiere 5 was released. This release sees Adobe get bang up to date with the revolution that is occurring in desktop video-editing, and position itself at the head of the pack.
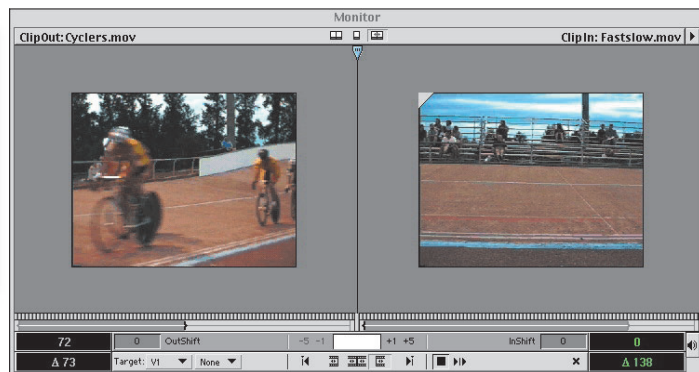
The two most significant developments that have occurred in the last couple of years have been the rise of the DV format, and the emergence of the Web as a viable delivery medium for streaming video.

These two factors, combined with ever-increasing processing power and storage capacity, have created a booming desktop-video market. Suddenly everyone wants to be the next James Cameron.

Net benefit

You only have to check out atomfilms.com, or even getoutthere.com to see how quickly video has succumbed to the DIY ethic. There's a whole generation of youngsters growing up for whom today's tools and techniques for making videos are as natural as buying a guitar and trying to make it as a rock star was for their parents' generation.

With Premiere, Adobe finds itself

Refined and chic
The workspace is familiar, but there are a number of refinements across all windows.

Trim-line
The monitor window can show single view, dual view, or Trim mode – used here to accurately set cuts between two clips.

competing with Apple for the hearts and minds of Mac users – with iMovie bundled as standard with FireWire-equipped Macs, and Final Cut Pro (£700) finally making it to market to great acclaim.

The principles behind Premiere are the same as virtually all other non-linear video-editing applications. Digitized video clips, audio clips and images are imported, adjusted and then combined to create a composition – with the addition of titles, transitions and other effects. Final compositions can then be output in a number of different formats for a variety of delivery media – from broadcast quality, printing to tape, recording onto DV, or as QuickTime or MPEG files for delivery on DVD, CD-ROM, and even the Web.

DV boon

Premiere 6.0's DV support is the biggest enhancement to the program, and it's excellent. There is now a wide range of affordable DV camcorders available offering broadcast-quality video, and most of them have FireWire output. FireWire (IEEE1394 as it's technically known, or iLink as Sony has named it) enables video to be captured from the camcorder to the computer digitally, quickly, and at high image-quality. One of the highlights of Premiere's DV capture capability is that you can select the exact make and model of your DV camcorder to ensure that its device control is optimized to your particular equipment.

Once configured, you can control the camera from the computer, fast-forwarding, rewinding and playing to locate the clips you require. The logging feature allows you to set the in and out points to define the clip you wish to

capture, and then save this information for later. This is a great – instead of performing each capture individually, it's much more convenient to skim through a tape and select a number of clips, which can then be captured as a batch process. There's a wide range of settings available to determine the compression method, screen size, etc – which allows you to tailor the captures to the type of project you're working on.

Premiere DV capture-settings feature support for non-square pixels, and for the 16:9 widescreen aspect-ratio. You can also playback through a DV device, allowing you to preview compositions at full-quality on a TV monitor, or even the screen of your camcorder.

If your camcorder supports DV in
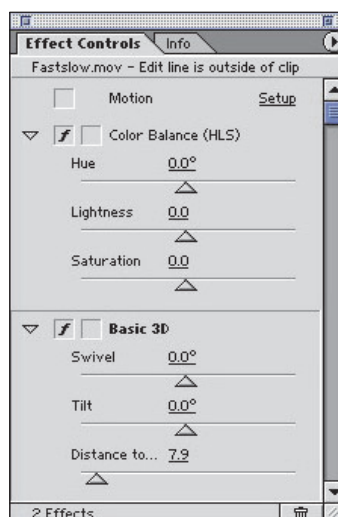
Effective
Effects are applied to clips using the Effects Control Palette – each effect can be controlled interactively.
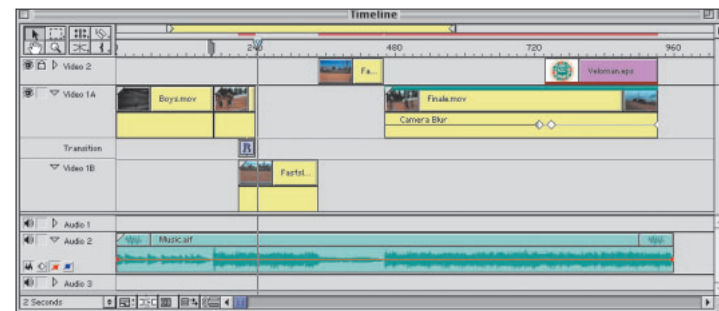
Chronological capture
The timeline can be used to show A/B editing or single-track editing, with the ability to toggle between the two.

Export option
The Save for Web feature uses a special version of Cleaner 5 EZ to export in a number of different Web-optimized file formats

as well as DV out – like the Sony DSR-PD150 that I tested on – then you can also record your compositions back out to the DV tape quickly and easily using the Export to Tape command.

Premiere's magnificent DV support makes it almost worth the upgrade price alone, beating the meagre capture options of MotoDV hands down.

For the first time, Premiere now lets you choose between two modes of operation for editing – single track or A/B. The latter will be familiar to previous Premiere users, while single-track editing may be a more familiar workspace if you have used other video-editing tools. But the differences are cosmetic – the program works largely identically in both modes.

Refined workspace

The workspace in Premiere has been refined to make it easier to manage assets, streamline workflow, and to bring it into line with other Adobe products.

There are a number of new palettes, including a Transitions palette, for better organization and application of transition effects; a History palette, similar to the one found in Photoshop; and an Effect Controls palette, which lets you control the parameters of the effects being applied to a clip, and see the effects immediately in the Monitor window. Imported files, such as Photoshop graphics, can now be edited in their source application using the Edit Original command.

The Timeline, Monitor and Project windows remain the most important components of Premiere's interface, and all have been enhanced significantly. The Timeline is where clips are arranged and sequenced chronologically, transitions

applied, and audio tracks added.

A new keyframe track allows the setting of keyframes for the application of Effects, giving a greater degree of control. There is also more visual information provided on audio tracks.

The Monitor window is where clips are previewed, and in and out points set. You also use the monitor to preview your compositions. The Monitor display is flexible and can be toggled between a single display, and a dual display – which can be used to show both source clips and preview compositions side by side – or for Trim mode, where you can set the out point of one clip and the in point of the following clip. Premiere 6.0 also supports split – cut edits, where the audio and video tracks of a clip can be given different in and out points.

Project pane

The Project window has been overhauled, and it's now much easier to manage the assets that are used to make a composition. Clips can be arranged into folders (called Bins) renamed and arranged accordingly. For instance, you could put audio, video and graphics into separate bins. Using the Export Bin from Project allows you to share bins from project to project, acting as a library of common elements. A preview facility lets you play clips, and provides details of the clip – such as dimensions, frame rate and average data rate. You can also set the poster frame that is displayed in the timeline so that you can quickly see at a glance the contents of a clip – useful if all your clips fade in from black.

Premiere offers a rapid storyboarding feature that allows a rough-and-ready edit to be assembled quickly. Clips are dragged from the Bin to the Storyboard window, where they can be arranged, and in and out points defined for each
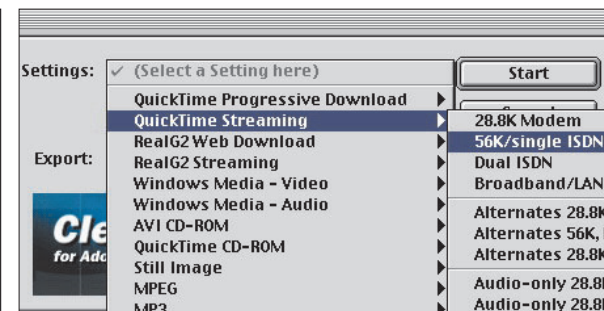
clip. Finally, the Automate to Timeline command automatically transfers the sequence of clips to the timeline to produce a rough composition ready for further refinement. This feature can be taken a step further by allowing you to synchronize the cuts to a piece of music.

Productivity plus

All these features will make Premiere an easy and more productive tool to work with, but do not necessarily offer more creative potential.

However, there are a few new and enhanced features that do increase the creative options of the program. Perhaps the most significant of these is the support for After Effects filters, with 25 filters from After Effects bundled.

Effects such as Directional Blur, Drop Shadow and Transform will open up new possibilities to Premiere users. Combined with the ways that Effects are applied and the excellent Keyframe control, it may seem that the divide between After Effects (AE) and Premiere is shrinking. However, Premiere has few of the motion

Fade away
Transitions are applied in the usual way, though they are now organized into a separate window.
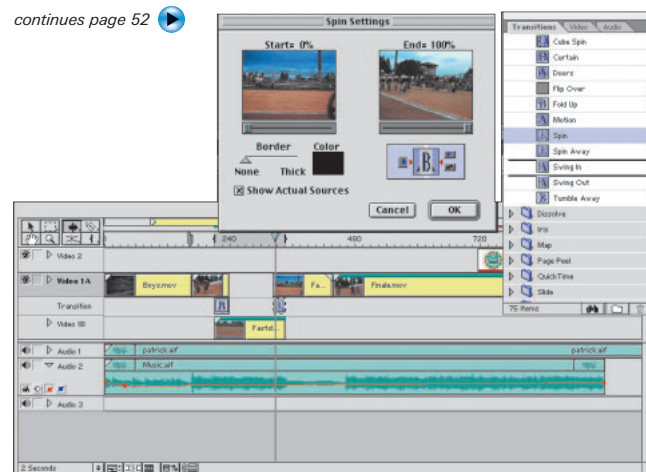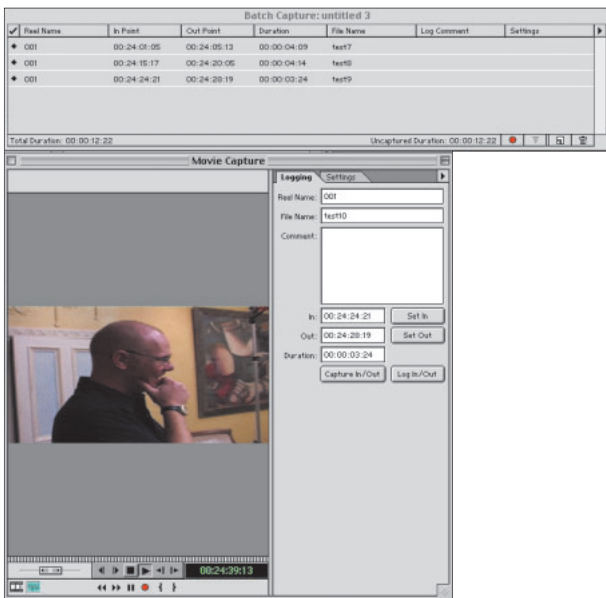
Auto capture
Premiere can control the DV source, and log in and out points to be automatically batch-captured later.

A real asset
The Project window now lets you arrange your assets into bins, and see clip details quickly (below left).

effects and animation capabilities of AE, and the spatial control is not as good. Premiere's key strengths are still editing and sequencing a number of clips.

Spruced up
Audio control has been given a serious revamp in the new version, with Adobe clearly of the opinion that Premiere is a capable audio mixer in its own right, as well as recognizing the importance of blending audio and video together. The new Audio Mixer tool lets you blend multiple audio tracks and adjust the properties of each track – turning your desktop into a mini mixing-desk.

Each audio track of your composition is represented separately with its own UV indicator, pan control, a gain slider, and mute/solo buttons. As your composition plays you can adjust levels interactively, with these control points then added to the timeline automatically. They can

also be manually edited from within the timeline.

Since Premiere 5.0, the Web has emerged as a viable delivery platform for streaming video, and the upgrade addresses this with a special Save for Web output option. This launches a version of Terran's Media Cleaner that's been customized especially for Adobe, and allows you to export in a number of Web formats – such as QuickTime, RealMedia and Windows Media Player. MPEG-1 and MP3 are also supported. While this method works well, advanced video-users will feel the benefit of using the full version of Cleaner 5 for its batch post-compression and customization capabilities.

A nice touch in Premiere 6.0 is the settings viewer. This allows you to see at a glance the settings for capture, project, clips, and export, so that you can spot any inconsistencies.

Additional Web integration comes from the ability to define events on the timeline, so you can launch URLs at relevant points during Web playback. This feature lacks the capability to define hotspots and other EventStream capabilities that Cleaner 5 boasts. But, if you're using GoLive, you can see and work with embedded metadata such as URLs and Chapters.

Macworld's buying advice
Premiere 6.0 is an extensive upgrade that offers fundamental productivity and workflow benefits to users. It also brings the tool up to date with the current movements in digital video. For Windows users some of the additional functionality (such as DirectX for enhanced sound capabilities, and OHCI support for direct FireWire device control) make Premiere a tasty option. This may also benefit Premiere's uptake on the Mac for
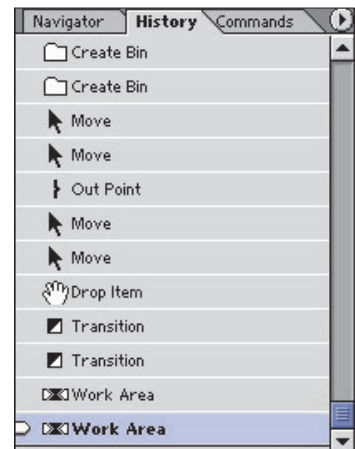
Rewriting history
The History palette allows you to retrace your steps, just like in Photoshop.

those wanting a cross-platform tool. However, the waters of the Mac market are clouded considerably for Adobe by the emergence of the highly rated Final Cut Pro (FCP). Premiere lacks FCP's multiple timeline capability; imported Photoshop files do not retain their layers; and there's no HDTV (High-Definition TV) capability. However, it wins hands-down on its DV integration, titling and effects capability, and audio support.

QuickTime and FireWire are Apple's gifts to the world, but that doesn't mean they know how best to use them. It's almost too close to call, but I think Adobe has done enough with this release to make it a better all-rounder for most users' requirements. For existing users, the upgrade is well worth it.
Martin Gittins

Custom made
There are a wide range of project settings to choose from, or you can customize your own.
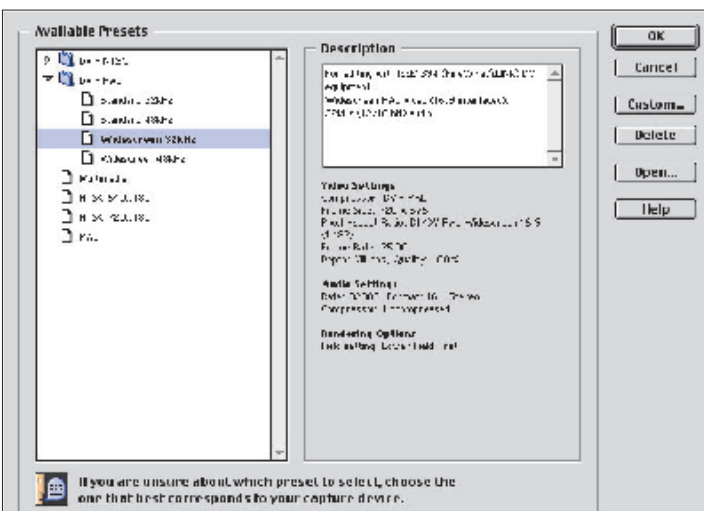
Mac OS 9.1

Publisher: Apple   (0800 039 1010)   www.apple.com/uk
Pros: New Window menu; USB printer sharing; faster; more stable; updated control panels and extensions; Disc Burner friendly; free upgrade.
Cons: 70MB download takes hours; incompatible with Mac OS X Public Beta; download doesn't include all latest extensions or control panels.
Minimum specs: PowerPC; upgrade requires OS 9; full-install from OS 8.5.
Price: £79; free upgrade from version 9.0 as download or full-install CD, £14 postage & packing (all including VAT).
Star Rating: ★★★★★/9.1

Window cleaner
Mac OS 9.1's new Window menu is a real treat, letting you access and control open Finder folders.

How to get OS 9.1

Mac OS 9.1 is available now as a free one-part or 15-part, self-mounting disk-copy download from http://asu.info.apple.com/swupdates.nsf/artnum/n11909 (International-English version). Apple warns that the 70MB download could take up to eight hours on a 56Kbps modem, which we're certainly not disputing. Unless you're connected to the Internet via ISDN or a fast leased line, then go for the multi-part download. It's a shame that Apple won't allow *Macworld* to cover-mount the update, and save its customers time and money.

Alternatively, you can buy a full-install CD for OS 9.1 for £14 p&p; call 0800 039 1010 for details. You'll need OS 9 proof of purchase. The 61/71/8100 Power Macs require a Mac OS 9.1 full-install CD to upgrade. The CD version includes later versions of some extensions and control panels; for example, ColorSync 3.0.3. Confusingly for simultaneous releases, the version of 9.1 that ships with the new Macs includes even-newer system parts; for example, Keyboard 8.5.3.

You may not have noticed it, but Apple has quietly updated its current operating system from Mac OS 9.0.4 to 9.1. Apple made no mention of it at Macworld Expo (see News) because it wants all publicity to be channelled to its forthcoming operating system Mac OS X. Yet OS 9.1 makes significant, if subtle, alterations both to the look-&-feel and architecture of the operating system.

First off, the update from OS 9 to 9.1 is free. If you're running a system pre-OS 9.0 and you own a Mac (made by Apple) no older than four years old, you really should upgrade to at least 9.0 (and then 9.0.4 or 9.1). This will cost you £79 – it's well worth it (for Apple's iTools alone).

Installation warning
Be sure to start your Mac from an OS 9 CD when installing the update – otherwise, nasty things can happen. When I tried, I got an alarming message about "Big System Morsels", which apparently contain resources for the System and/or System Resources files. I also crashed horribly after installing 9.1 without first starting from an OS 9 CD, and had to re-initialize my hard disk. So, do as Apple says!

What's new
Mac OS 9.1 offers some neat feature and performance enhancements, along with changes designed to begin the transition to Mac OS X – Apple's thoroughly re-architectured Unix-based operating system due to ship on March 24 (see News, pages 26-27).

You'll notice that 9.1 renames the Applications folder "Applications (Mac OS 9)", and moves the Internet, Apple Extras, and Utilities folders into it. You can't then rename this folder from the Finder. Several preferences files – including Finder Preferences – are deleted. OS 9.1 also removes items from the Apple Menu Items folder, such as Note Pad. This re-arrangement of folders and apps can cause problems for aliases, but these are easily fixed.
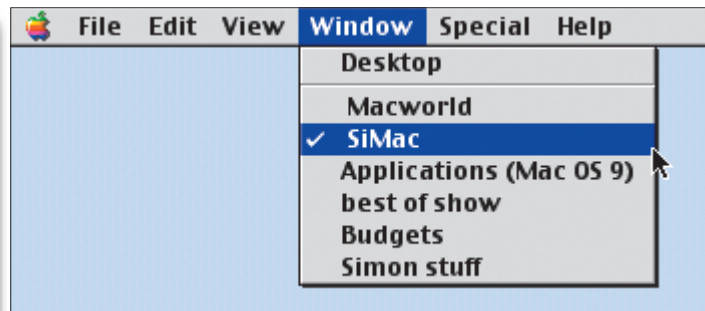
OS 9.1 also installs a new Window menu in the top Finder menu bar (see screenshot "Window cleaner"). This handy menu lists all the open Finder windows, including tabbed windows on the bottom of the screen. New keyboard shortcuts make this valuable new addition even more handy. Holding down the ⌘ key while using the menu closes the window in question; ⌘-Shift puts away a pop-up window; Control expands the selection and minimizes all other open windows; Control-Option makes the selection active and expands all open windows. This addition is one of those "how-did-I-live-without-it" type updates that makes 9.1 a real winner.

Mac OS 9.1 also includes new Finder shortcuts. You can now empty the Trash by clicking ⌘-Shift-Delete (Backspace). View Options can be selected via ⌘-J; and Add To Favorites is now a matter of hitting ⌘-T.

One of the best things about OS 9 is its ability to work with Apple's wonderful free iTools services (go to **www.apple.com/itools**), especially iDisk and Home Page. OS 9.1 continues the link-up by adding a "Connect to iDisk" selection to the Shortcuts button in Open and Save dialog boxes and the Network Browser (see "iDisk friendly").

USB printer sharing is now installed as part of the standard system software, making it possible for users on the same

Sounds like 9.1 spirit
Pressing the Option key with a Volume key on Apple's Pro Keyboard or PowerBooks opens the Sound control panel, which has been redesigned, and contains a new level meter and gain knob. This will be useful when you start playing with iTunes (see page 85).
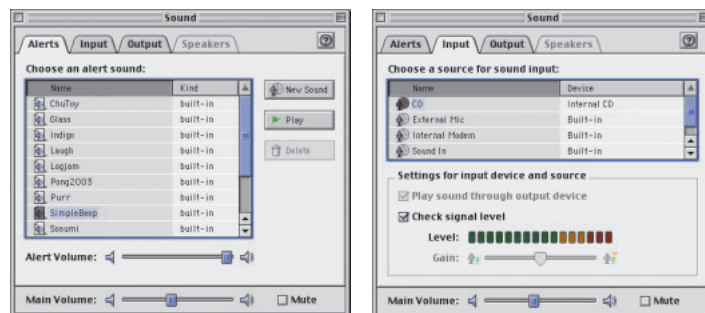
network to share connected USB printers. A new control panel, "USB Printer Sharing", makes set-up a one-click breeze. This facility will make upgrading worthwhile for anyone frustrated with this output situation up to now.

I was horrified when I started using QuarkXPress on 9.1, as it refused to recognize all those function-key commands I rely on. However, this seems to be the fault of a new Hot Function Key setting that can be switched off in the Keyboard control panel. Phew!

One of the top things about OS 9.1 is its ability to burn CD-RWs without third-party software, such as Roxio's Toast. You need to download a piece of software called Disc Burner from Apple's Web site. Unfortunately, the International-English version of Disc Burner was not available at press time, so we couldn't test it. For more details, see page 82.
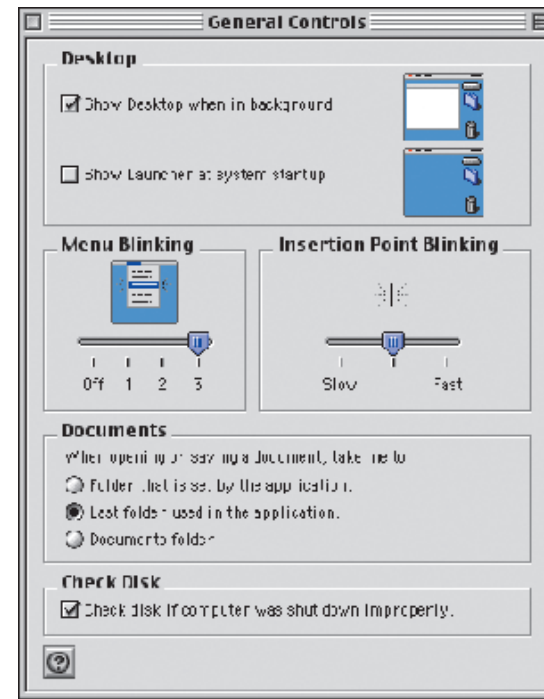
Under the hood
Many of OS 9.1's changes are invisible to the non-programmers eye. The Process Manager is now entirely written in native PowerPC code, which reduces task-swapping overhead and improves overall system performance. Other changes include free-space extent caching in the file system, which increases the efficiency and speed of disk transactions, and an increase in HFS+ cluster sizes to 8K for volumes bigger than 260GB.

Left: General
In the updated General Controls control panel the Folder Protection preference is gone, and the Shut Down Warning is now called Check Disk.

Above: Startup succession
Mac OS 9 comes with an entirely new Startup Disk control panel written entirely in PowerPC native code. It features better integration with the rest of the system, and improved user-interface facilities.

Left: iDisk friendly
Apple's iTools is now definitely a real part of the Mac OS, thanks in part to this new quick link to your iDisk via Open and Save dialog boxes and the Network Browser.

Some changes benefit PowerBook and iBook owners. For instance, if a program in 9.1 is running a delay loop – such as for the zoom box when a window is opened – and no other processes are running, the OS puts the CPU to sleep for the duration of the loop. Over time, this should translate into noticeable gains in battery life. The wake from sleep process is also speeded up, especially after updating over a clean install of 9.0.4.

Mac OS 9.1 also adds full support for all the keys on the Apple Pro Keyboard when used with pre-summer-2000 Macs.

There are many other small alterations. When copying files, it is no longer possible to overwrite a normal document file with an alias file. And 9.1's Finder user interface no longer allows users to turn on file sharing for folders and volumes with names longer than 27 characters. A crashing problem that could occur when there was an invisible file in the Trash and another file with the same name was dragged to the Trash has been corrected. Some errors that could occur in the Finder when dragging FireWire drives to Trash have also been corrected.

OS 9.1's Finder does not allow users to create an alias inside a drop box. Previous versions of the Finder would allow this operation, but they would always fail and leave a partially created alias inside the drop box.

Thankfully, the new Finder no longer crashes when over 200 nested folders are expanded in a list view. And pop-up window tabs are now resized appropriately after the 9.1 user changes his or her screen resolutions.

Ironically for an operating-system update that is meant to work better with Mac OS X, 9.1 is not compatible with the Classic environment in the OS X Public Beta – due to changes that require modifications to the Classic environment. Apple promises, however, that this update will work with the final release of OS X.

Macworld's buying advice
As a free update, which makes your Mac faster – particularly when switching between applications – and more stable, it's hard to knock Mac OS 9.1. Yes, Apple could make it a lot easier to update – why make your customers spend £14 or eight hours when it could be carried on

Macworld's cover disc? And, yes, you should be prepared to watch out for incompatibilities, and be ready to wait for third-party software developers to update their programs (see below). But, if you're running OS 9.0.4, you should seriously think about upgrading to 9.1 – if only for the peace of mind that running the most up-to-date operating system will bring – let alone the myriad bug fixes and handy new features, such as Disc Burner.
Simon Jary

9.1 software compatibility

As with all operating-system updates, you must be ready for glitches between it and older third-party software. The first casualties caused by new OS versions are traditionally Adobe's Type Manager (ATM) and Type Reunion (ATR). Apple warns that "changes in Mac OS 9.1 cause an incompatibility with ATM, ATM Deluxe and ATR" and states that 9.1 dumps your old ATM control panel into the Control Panels (Disabled) folder during installation. While Apple claims that there are ATM and ATR updates at Adobe's Web site (www.adobe.co.uk), Adobe tells *Macworld* that "the versions that were posted in October 2000 were not related to Mac OS 9.1". Adobe has seen some reports of incompatibility between ATM Light and Mac OS 9.1, but "mostly in relation to other applications". Adobe's engineering team is in the process of trying to confirm if a problem does exist: "If one exists, we plan to work on a fix, and post a

new version to the Web site in the near future".

The always-excellent MacFixIt Web site (www.macfixit.com) has a special Mac OS 9.1 page that is regularly updated with reported incompatibilities and possible fixes. For example, there's a way to make sure Casady & Greene's Conflict Catcher will work with 9.1, and confirmation from Aladdin Systems that Drag Strip requires a patch. There are also problems with some external USB modems, according to MacFixIt.

There don't seem to be many serious OS 9.1 incompatibilities. But if this sort of stuff scares you, I'd advise you wait till you've checked that your favourite applications are 9.1 compatible. But remember that 9.1 also fixes many previous system-related bugs and glitches, such as the oft-reported Sleep problems of 9.0.4. At the very least, upgrade to 9.0.4 – free from version 9.0; £79 otherwise.

3D-graphics creator

Strata 3Dpro 3.0

Publisher: C3D Digital
www.3d.com
Distributor: Gomark
(020 7731 7930)
Pros: Relatively inexpensive; easy to learn; powerful rendering features.
Cons: Limited modelling tools; frustrating interface controls.
Min specs: Mac OS 8.5 or later; 128MB RAM.
Price: £517 (excluding VAT)
Star Rating: ★★★★/8.6

After languishing on the sidelines for years, Strata is back – with a new parent company, C3D Digital, and a new product name: Strata 3Dpro 3.0. But while this update helps Strata retain its position as the most user-friendly 3D application, with rendering and animation features comparable to more expensive packages, the Strata community may not find enough new additions here to make it worth the wait.

At first glance, there's no noticeable difference between Strata 3Dpro and its previous incarnation, Strata Studio Pro. The distinctive interface and efficient workflow are unchanged, but behind the scenes you'll find support for the G4 chip's AltiVec engine and multiprocessor environment.

Strata 3Dpro 3.0's implementation of standard 3D-tools for modelling, texturing, and animation are straightforward and intuitive, as are the comprehensive bone and inverse-kinematics systems. The texturing tools come with a large library of textures and shaders, and allow WYSIWYG texture editing directly on objects. For modelling, Strata's flexible Skin and Hull tools let you generate 3D objects from 2D curves. You can also convert objects into bézier surfaces.

Strata 3Dpro's tool-set stops short of giving users full control over modelling and interface variables. Because the program calculates mesh-object resolution automatically, you can't customize the polygon count for optimal

Hidden power
Strata 3Dpro's Esoterica settings let you fine-tune and create broadcast-quality images.

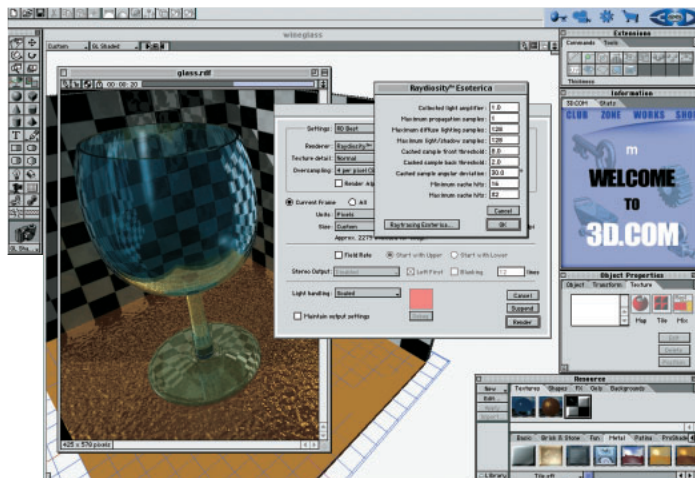redraw and rendering times. It also lacks options for sub-geometry component editing, such as polygon extrusion and vertex welding. There are still no hot keys for panning, tilting, or zooming, and the program's single undo can be extremely limiting for professional production work. Strata 3Dpro does directly import the Amapi model format, however, so users have access to a spline-based modeller.

Where Strata 3Dpro really delivers is in rendering. The ray-tracing and radiosity renderer offers fine numeric control over shadow quality, primary light-ray fidelity (even the number of secondary light rays), letting you balance image quality and

rendering time. The result is photo-realistic still images and QuickTime movies at up to broadcast resolution.

Macworld's buying advice

With 3Dpro 3.0, Strata lives up to its reputation as a viable and affordable 3D-solution for the Mac. The price should be attractive to architects and designers looking for a quality 3D-production tool, as well as to enthusiasts looking for an introduction to the world of 3D. More-experienced 3D professionals will find Strata easy to learn, but they may find its modelling and interface features limiting.
Matthew Lowrie

3D-video creation

Combustion 1.0

Publisher: Discreet www.discreet.com
Distributor: Graphics Domain
(01494 515 500)
Pros: Powerful 3D compositing.
Cons: Expensive; minor bugs; inflexible text.
Min specs: PowerPC; 128MB RAM; 4MB graphics card.
Price: £2,295 (excluding VAT)
Star Rating: ★★★★/8.3

Discreet, maker of SGI-video applications with such incendiary names as Flame and Inferno, is now blazing a trail on the Mac. Combustion 1.0 combines the main strengths of Adobe After Effects and Pinnacle Systems' Commotion with a breakthrough feature all its own: true 3D compositing. The result is a video powerhouse that makes high demands on both computing and purchasing power.

In addition to its 400-page tutorial, Combustion comes with a special guide to help After Effects users shift from 2D

Room for a view
Combustion's 3D-compositing workspace lets you check work from different viewpoints.

compositing into 3D. This is a wise move, since Combustion has a unique look and approach. The program delivers a totally 3D environment, with unlimited layers and lights, complex reflectivity, and a fully animatable camera. Layers are still flat – although you can hinge them together – but shadows, lighting and focus controls lend depth to routine compositing jobs.

Although Combustion implements 3D with stunning finesse, After Effects users will miss some features, including composition and layer markers and time remapping. And the text features are disappointingly inflexible; click away from the text tool, and you can no longer edit text.

Consistent with its SGI origins, Combustion offers extremely well-developed, detailed motion tracking, painting, keying, and colour correction – not your typical version 1.0 tools. The program accepts many Adobe Photoshop and After Effects plug-ins; it even one-ups After Effects by letting you edit imported Illustrator art. But Combustion does suffer

from some new-release bugginess. These minor problems, along with upcoming multiprocessor-G4 support, make a compelling argument for holding off until Discreet releases an update.

When it comes to rendering, Combustion is hardly a house on fire; because the program is always calculating in 3D, rendering takes a lot longer than in After Effects. And, although Combustion's powerful RAM previewing can greatly accelerate your workflow, you need at least a 450MHz G3 or G4 with 512MB RAM if you want to experience anything like spontaneous Combustion.

Macworld's buying advice

Combustion may do more than either the After Effects Production Bundle or Commotion Pro, but that doesn't justify its cost – equal to both those programs combined. Still, it delivers first-rate results, and if you need robust 3D-compositing, it's the only game in town. Just make sure you have a blazingly fast computer – and money to burn.
Galen Fott

3D-packaging design

QuarkWrapture

Publisher: Quark (00800 1787 8275)
www.quark.co.uk
Pros: Can speed some packaging design; assists in spotting mistakes in die-line and construction.
Cons: Lack of curved-surface support; no double-sided printing; no paper-weight settings; poor documentation; very expensive.
Min specs: Mac OS 8.1
Price: £4,757 (excluding VAT)
Star Rating: ★★★/5.5

Familiar feel
The interface is almost identical to XPress'. The key feature is the Mockup window that displays the finished item and can be updated with a click.

The art of 3D packaging can be a confusing prospect to the uninitiated. Complex folding and die cuts can turn a simple box into a 3D maze that would have Escher scratching the back of his head with his foot. Like the dark art of imposition, a wrong turn can leave you with upside-down graphics or printing on the wrong side of the box.

Coming from a 3D background, rather than a print background, I was disappointed to find that only basic models can be made. Anything more complex than a simple box – as long as there's no curved surfaces – would require the model to be designed in a 3D application and imported into Wrapture. This is not a terrible hardship – packaging tends to be designed like this currently – but if it was part of Wrapture, it would make the workflow much more simple.

Once the DXF or EPS file is imported from the 2D or 3D application, you can start laying out the graphics. Much like QuarkXPress, Wrapture is a place to pull together pre-prepared components of the whole design. The images may come from Illustrator or Photoshop, and a 3D package supplies the bones on which you dress your final product. What Wrapture offers is the ability to see

Straight and narrow
You aren't limited to straight lines when designing the cut lines, you just have to make sure that the end result doesn't require any curved surfaces.

what the final 3D model will look like.

The Mockup window shows what the product will look like after the folds and cuts have been done, and the printing is finished. Like a QuickTime VR window, you can grab it and spin it around to view at any angle. This will show up any wonky graphics or unfolded creases. Unfolded creases can cause huge problems when the die is cut and stamped. If your only physical mock-up was hand folded it may be obvious where a crease should go, so you might just put the crease in. If it isn't stamped, then the mistake could make its way to the printers before it's found.

There are a number of features that users will almost immediately want when they start using Wrapture – unfortunately, this version is missing some. The first and most amazing omission is the ability to include curved surfaces. I'm not talking about complex curved and sculptured chocolate boxes, or even bags of cement. Wrapture can't even model a can of beans. I know the vast majority of packaging is simple and boxy, but bottle and tin labels are also common. They may not require any folding, but labels are packaging and I would've expected Wrapture to be able to do them.

When paper is folded it's not always a razor sharp edge. Imagine the difference between a tissue box and a box for a refrigerator. The weight of the material will differ greatly, and folds will act differently. There's no setting for the type of material used; so all Wrapture folds are razor sharp.

The structure of the box is made up of five different line types. Each line is

either a Cut, Fold, Perforation, Partial Cut or Reverse Partial cut. It's possible to do complex cut-outs, but the perforation lines are difficult to see in the Mockup window. This means there's still a danger that perforation problems could go unnoticed.

A major piece of the Wrapture package is the ability to output QTVR files to send to clients for approval. The file size can be adjusted by the detailed settings in the Save dialog box.

Macworld's buying advice
The one eye-popping feature that I haven't mentioned yet is the price tag. At £4,757, Wrapture is aimed at the demanding high-volume time-critical package-design guru. This is a high price to pay for a product that in many ways isn't finished yet. The FAQ on the Quark Web site lists a number of features expected in future versions, including curved surfaces, animated-folding movies and embossing. To my mind these features should have been there before the release of version 1.0.

In a quick survey of package designers, the general feeling was that something like this has no business costing almost five grand. It works more like an XPress plug-in. It may be different for somebody at Unilever who cranks out washing-powder boxes on a daily basis, but this is a very small market for Quark to aim at. Version 2.0 sounds like it might be a really useful tool. If the price were to shrink to under £1,000, I would probably recommend it. In its current state, though, it's only for enthusiastic early adopters with very deep pockets.
David Fanning

AppleScript is one of the most-powerful Macintosh utilities. Late Night Software's Script Debugger 2.0.3 makes AppleScript more usable by providing a powerful development environment. However, compatibility issues and price limit its usefulness.

The latest version of Script Debugger adds a troop of features. For example, while the previous version could debug only global variables, Script Debugger 2.0 can also track local variables. You can set break points and watch points, and the program can step into, over, and out of handlers. The included AppleScript-debugger dialect lets you follow scripts outside Script Debugger itself – a requirement for testing CGIs.

The tabbed-palette interface allows easy access to clippings, application dictionaries, open windows, and scripts, and you can rearrange or hide the tabs.

Script Debugger's primary competitor is the recently released Scripter 2.5 from Main Event Software (www.mainevent.com). The two programs are identically priced and fairly comparable, although each has its vocal proponents. However, when
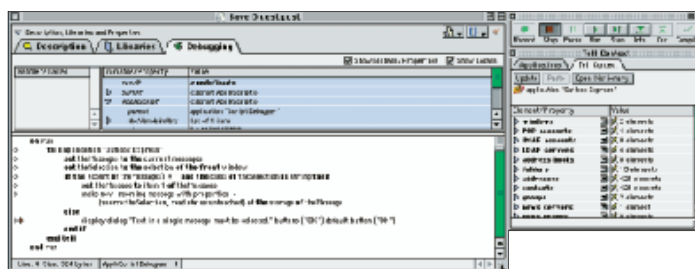
Tracking down bugs
Script Debugger 2.0 lets you access everything you might need to create flawless AppleScripts.

Main Event released its latest upgrade, it also released a light version of Scripter – the $89 Scripter Personal Edition. If you haven't yet ventured into AppleScript's depths, you can dangle your feet in the water with Scripter Personal Edition.

Also unlike the competition, Script Debugger is itself scriptable, which enables it to interact with utilities and allows its scripts to change themselves.

But these new features are not without flaws. You can't use Script Debugger to script Microsoft Word 98 or Excel 98, nor can you use it to debug AppleScript inside Digital Technology's FaceSpan, a script-creation utility.

Macworld's buying advice

If you own Script Debugger 1.x, this is a must-have upgrade. But if you've never scripted before, Script Debugger 2.0 may be overkill. Main Event Software's Scripter Personal Edition offers an easier, cheaper way to get started.
Dori Smith

I recently bought a pre-Macworld Expo, San Francisco G4 and quickly realized that I would need a PCI expansion unit if I wanted to use more than 3 PCI cards. The expansion units I've seen advertised previously were all pretty expensive, so I was interested when I saw the new offering from Mobility Electronics – the T35.

It looks like a small charcoal-coloured tower computer with power- and drive-activity LED status-indicators on the front panel. On the back panel there's a power connector, an integrated two-port USB hub, and a Split Bridge port that interfaces to the PCI card in the computer. Inside there is space for three full-length PCI cards, three 3.5-inch hard-drive bays, and two 5.25-inch user-accessible drive bays for removable drives. Two integrated IDE-controllers support a total of four IDE drives – but not, frustratingly, on the Mac. G3s will recognize only the primary IDE bus of the T35, and the G4 does not support either of the IDE controllers. Another limitation is that G3 and G4 machines will allow only two CD units (CD/DVD/CD-RW) in any configuration at one time.

The Mobility Web site boldly states that the T35 works perfectly with the G3 and G4 – and is ideal for use with audio and video cards. Specifically: "Expansion for Apple G3 and G4 (*sic*), Servers and Desktop Computers at a fraction of the cost. The EasiExpansion T35 is the perfect solution. Ideal for video and audio cards."

Does the reality match up to this claim? Installation was straightforward enough. I just had to insert the CD-ROM and click on the Apple installer to place a control panel and extension to support the card in my system folder. I powered down, opened the Mac, took out my audio card, put the supplied Mobility PCI card in its place, put the Audio card in the T35, hooked up the cable, then powered everything up again. Unfortunately, my Pro Tools software could not communicate properly with the card when it was in the T35. So, back to the Mobility Web site to check out the T35 compatibility chart. Right off, I noticed that all the audio cards listed are PC-only, and the video and MPEG cards are almost certainly PC-only as well. I have a Pro Tools MIX card, for example, which works on Mac or PC – but this is not listed as compatible. Also, I didn't see the more professional video cards – such as the Media 100 – listed either.

The other PCI card I have is an Atto SCSI accelerator card, which is recommended for use with Pro Tools. Again, this is not compatible – although several of the popular Adaptec cards are.

All of this blows Mobility's claim that the device is ideal for use with Apple computers – and particularly for audio and video – right out of the box.

Macworld's buying advice

In many respects, the T35 offers good value for money – it is affordable and has many more features, such as support for several additional disk drives as well as the PCI cards, than previously-available expansion units. But Mac users will have to check the compatibility list very carefully before buying.
Mike Collins

Eye Candy 4000

Publisher: Alien Skin Software www.alienskin.com
Distributor: Digital Toolbox
(020 8201 4555)
Pros: Improved interface; five new filters; well-written printed manual.
Cons: Slow rendering of high-resolution images; inadequate electronic help.
Price: £150 (excluding VAT)
Min specs: Adobe Photoshop 4.0 or later, ImageReady 1.0 or later, Macromedia Fireworks 2 or later, or Deneba Canvas 6; Mac OS 8.6 or later.
Star Rating: ★★★★/8.6

A dobe Photoshop and other image editors are powerful, but their built-in effect filters are often limited in number and scope. Third-party plug-ins aim to fill the void, and one of the best is Alien Skin Software's Eye Candy 4000. This update to Eye Candy 3.0 works with Adobe Photoshop 4.0, Fireworks 2, ImageReady 1.0, and Deneba Canvas 6 (and later versions of each). Although only 5 of the 23 filters are new, improvements to the older filters and the interface make this a smart buy whether you're upgrading or trying Eye Candy for the first time.

Eye Candy 4000 bests the previous version's offbeat interface by incorporating industry-standard features such as tabbed palettes. The well-organized tabs offer easy access to dozens of controls, including the new Color Gradient and Bevel Profile editors. Another welcome change makes the preview window resizable and potentially many times larger than Eye Candy 3.0's.

When you launch a filter, the Eye Candy commands take over the menu bar. Well-planned new options include unlimited undo, and the ability to switch to other filters from the preview window.

Eye Candy 4000 is simple for both pros and novices. Each filter has several
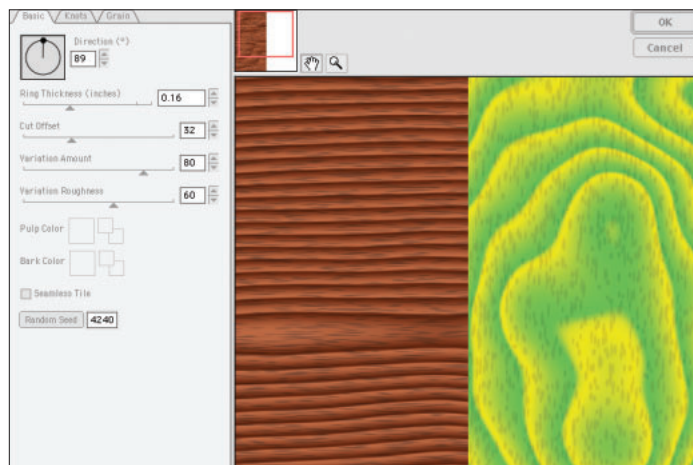
Fine grains
One of Eye Candy 4000's best new filters, Wood, can create fabulous effects in a matter of seconds.

presets, which you can quickly customize for unique effects via sliders or numeric values.

Eye Candy 4000 requires a PowerPC processor and at least 32MB RAM, but you may want more. We tested the program on a 450MHz G4 with 128MB RAM, and still found rendering slow at times. However, if you're using the plug-ins in Photoshop, you can take advantage of a new feature to speed rendering time – just specify absolute units and you can work on 72dpi images, which render quickly. Save your settings, then apply them to higher-res images.

Macworld's buying advice
If your effects needs go beyond the filters built into image editors such as Photoshop, Eye Candy 4000 is a solid choice.
Terri Stone

Alien Crossfire

Publisher: Firaxis
www.firaxis.com
Distributor: Softline
(01372 726 333)
Pros: New story; new factions; more involving.
Cons: Graphics still bland; need SMAC to play the expansion pack.
Min specs: Mac OS 8.5 or later.
Price: £20 (including VAT)
Star Rating: ★★★★★/9.0

S id Meier's Alpha Centauri (SMAC) is rightly hailed as the best turn-based strategy game ever. In its space faring, planet-colonizing world, it pitched ideological factions against each other in a desperate bid to unlock the alien secrets of Alpha Centauri. And now it's back in the shape of Alien Crossfire

Empire building
It still features the same involving gameplay that made SMAC such a success. You get to build and control an empire, research technologies, construct armies and robot warriors, and spy on and disrupt both allies and enemies.

Set shortly after planetfall in Alpha Centauri, the luckless colonists are confronted with a new threat in the form to two mysterious alien cultures. Five new human factions have also emerged, such as The Free Drones (a cross between cypercommunism and anarchy), making for a completely new game.

Other new features surface in Alien Crossfire. New technologies based on developments stolen from the alien invaders can be deployed, and new facilities –such as aquafarms, covert operations centres, and sub-sea trunklines – can be built. Additional secret projects are itching to be

SMACed up
Alien Crossfire offers a combo of full-blown sequel and gameplay-extending expansion disc to SMAC.

discovered, and take the form of such conquering delights as the Nethack Terminal which lets you access an opponent's network and steal their data.

As with any turn-based game, it's the rules that breathe life into it. Victory conditions now figure – such as the ability to build a gigantic distress beacon, if you're playing as one of the Manifold aliens, and phone home to request an Independence-Day-style fleet. Also, Hotseat multiplayer mode has been added, as has an email multiplayer mode.

And while the graphics haven't been given the overhaul that many would like, the cut-scene movies are still exceptional.

Macworld's buying advice
Any self-respecting SMAC addict will need to get Alien Crossfire to ensure their regular fix of supreme turn-based empire building. It's an intelligent addition to the world that both adds sweeping changes and a range of minute tweaks to an already unsurpassed gaming experience.
Matthew Bath
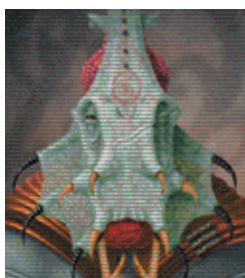
Bargin Web-editor

PageSpinner 3.0.1

Publisher: Optima System,
www.optima-system.com,
support@optima-system.com
Pros: Easy to learn; capable; inexpensive; handles CSS and JavaScript.
Cons: Doesn't allow you to modify tags; HTML checker needs improvement; slow at some tasks; relies on AppleScript for FTP.
Min specs: System 7.1
Price: $30 (from Web site)
Star Rating: ★★★★/8.3

With the death of Adobe PageMill and every other WYSIWYG Web-editor under £150, the field of affordable Web-authoring tools has narrowed to just one: Optima's PageSpinner 3.0.1. It offers features found in programs several times the price, but still shows a few rough edges.

PageSpinner is actually a suite that includes StyleSpinner (for writing Cascading Style Sheets [CSS]), FAQ-Spinner (for writing FAQs), and MailSpinner (for publishing Eudora-based email on the Web).

PageSpinner is neither a Web designer's tool like Macromedia's Dreamweaver, nor a Web programmer's tool like Bare Bones' BBEdit – but is something in between. While you see every HTML tag you write (as in BBEdit), the content between those tags appears as it would in a browser (as in Dreamweaver). Extremists on both ends will find this unacceptable, but it might be just right for the masses in the middle.

With PageSpinner's latest upgrade, Optima has brought the program up to current Web standards. It now supports HTML 4.01 and XHTML 1.0. And, unlike BBEdit, it helps you add both JavaScript and CSS to your pages. You don't need to know how these work; just fill out the fields in an assistant, and PageSpinner does the coding for you. Its code isn't as lean as that written by a knowledgeable person, but it's comparable to anything produced by PageSpinner's WYSIWYG competitors – which cost far more.

However, PageSpinner isn't ready to completely supplant the big timers. To change a tag's attribute, you have to delete the tag and re-create it – if you try to edit an existing tag, PageSpinner will insert a new tag, sometimes right in the middle of the current one. And while the HTML checker generally works well, it did flag some error-free code and missed a few minor errors – and it doesn't check CSS or JavaScript. PageSpinner uses AppleScript to find and replace text across pages, causing a significant performance hit. And with no built-in FTP capability, PageSpinner uses AppleScript to talk with third-party programs.
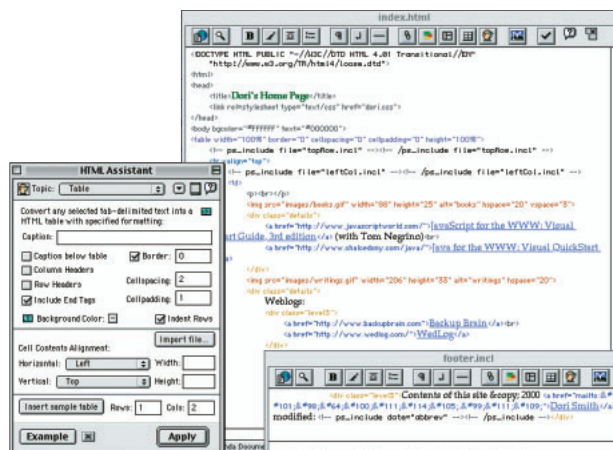
Macworld's buying advice

At $30, PageSpinner is a great bargain and the simplest way to learn to write HTML on the Mac. Although its editing style is a little quirky, it's worth trying out. **Dori Smith**

Quasi-WYSIWYG
PageSpinner's approach to Web pages falls between WYSIWYG and plain-text editors.

Audio-composition tool

Phrazer

Publisher: BitHeadz www.BitHeadz.com
Distributor: Unity Audio (01440 785 843)
Pros: Loops or phrases are automatically tempo mapped and pitch stretched.
Cons: Version 1.0 feels clunky; some limitations.
Min specs: 300MHz Power Mac G3; Mac OS 8.1; high-quality ASIO or DirectIO sound card.
Price: £350 (excluding VAT)
Star Rating: ★★★/5.0

From BitHeadz software comes Phrazer – the Mac's answer to ACID for the PC. Like ACID, Phrazer is a loop-based composition tool.

You can use your own loops, third-party loops, or the factory loops that come with Phrazer. Loops or phrases are automatically tempo-mapped and pitch-stretched – so even though the loops may be of different tempos or in different keys, Phrazer sorts all this out for you. You can record and edit your own samples within Phrazer, and MIDI or computer keyboard triggers can be used to mute and unmute tracks. This allows Phrazer to be played in real time. You can even trigger one-shot samples in real-time, and MIDI can also be used for real-time track volume and pan changes. Phrazer will work with your favourite MIDI+ Audio sequencer, feeding the audio output from Phrazer directly into the software using Sound Manager, ASIO, DirectIO, DirectConnect, ReWire, or MAS.

The track data view at the right hand side of the main window is where you arrange audio samples. The editor at the bottom of the main window displays the five editors one at time – depending on which is selected in the Edit Menu. Here you can edit the samples in the tracks and in the effects parameters. There are tools to edit the sample data graphically, and you can also use the popup "munge" dialogs to do all the usual stuff – such as fade, loop, reverse and so forth.

The effects are one of the neatest things to play with, and you can change these while the sequence is running – swapping chorus effects for reverb, for example, on-the-fly. Each track can incorporate several different effects which can be applied individually to different sections, or you can use global effects if you want an effect on all the time.

Once you've finished your masterpiece in Phrazer, it can record this to disk using the Render command – which plays back a song and creates a new AIFF file on the hard disk. As the song is playing, you can turn tracks on and off – alter effects and the changes will be recorded into a new AIFF file.
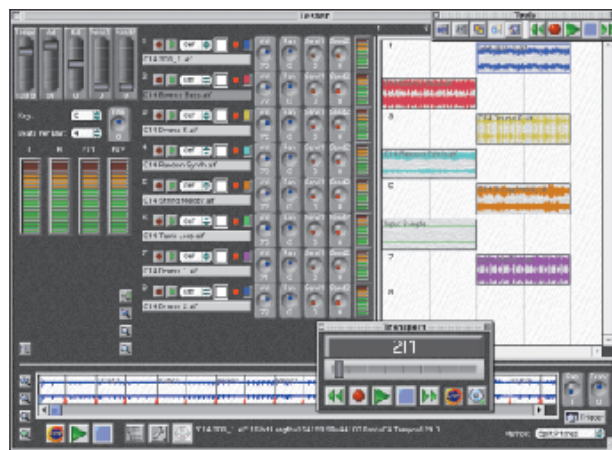
Macworld's buying advice

Phrazer is a bit clunky, but it's definitely fun. It's not quite as advanced as ACID in terms of zooming in, for example, but it has MIDI control and allows plenty of sample manipulation. If you want to really get serious though, you should probably wait for the next version which should really boogie. **Mike Collins**

Phrazed in
Phrazer will automatically stretch loops with different tempos, so they play in sync.

Internal ATA hard-drives compared and rated

Macworld LAB TEST

It's easy to fill up 10GB with MP3 files, digital images, and multimedia projects. So if you haven't yet upgraded your hard drive, now might be the time. These days, you can get a whole lot of drive for your money, as large-capacity drives – 40GB to 80GB or more – cost less than £300.

For this roundup, Macworld Lab tested seven 30GB-plus internal ATA hard drives: APS/IBM's Deskstar 75GXP (45GB), Maxtor's DiamondMax 80 (80GB) and DiamondMax Plus 45 (45GB), Quantum's Fireball Plus LM (30.4GB), Seagate's Barracuda ATA III (40GB) and U Series 5 (40GB) (pictured), and Western Digital's Caviar WD400BB (40GB). Each has an ATA bus rated at 100MBps (or ATA100), except for the Fireball Plus, with a rating of 66MBps (or ATA66).

Easy installation

Installing these drives is straightforward. If you have a G4, just pop open the door, attach the drive with a mounting bracket, plug in a cable, and initialize the drive, and then you're ready to go (see How-to: Storage: February 2001 *Macworld*).

We measured the amount of time it took to copy a 100MB file and to copy a folder that contained 100MB in small files. We also timed how long it took to optimize a disk using Speed Disk from Norton Utilities 5.0.3, a test that measures a drive's ability to seek data.

Our test system, a 500MHz Power Mac G4, uses an ATA bus rated at 66MBps – a speed bottleneck that can restrict the overall speed of ATA100

drives. As the results show, the performance of the Quantum Fireball Plus LM, with its 66MBps bus, was comparable to that of its 100MBps counterparts. Its speed, combined with its price – it's the least-expensive drive in our roundup – make the Fireball an ideal upgrade for budget-conscious users who need the extra disk space.

So are ATA100 drives a waste of money? No. You can bet that Mac hardware in the not-so-distant future will have an ATA100 bus, and if you sell your old Mac, you'll be able to keep the ATA100 drive and use it in your new machine.

The fastest drive in our tests was the Seagate Barracuda ATA III, a 40GB drive rated at 7,200 rotations per minute (rpm). It was considerably faster than the other 40GB, 7,200rpm drive, the Western

Digital Caviar WD400BB. Seagate's other 40GB drive, the U Series 5, has a slower rotation speed of 5,400rpm, which explains its slow performance – compared with the other two 40GB drives – in the disk-optimization test.

The largest-capacity drive tested, the Maxtor DiamondMax 80, posted some of the slower results, due to its 5,400rpm speed. But with its relatively low price, the DiamondMax 80 is an excellent deal if you really need the space.

Since these are internal hard drives, you don't get much in terms of bundled extras. In fact, with all but the APS/IBM Deskstar 75GXP, you don't get anything at all. The Deskstar comes with APS's formatting software and utilities, but these tools don't offer a significant advantage over the Mac OS utilities.

The knowledge
For tips on installing internal drives, see How to: Storage in February's Macworld.

Drive safely

Best results in test. Shorter bars and shorter times are better.

Hard-drive performance compared:	Duplicate 100MB file	Duplicate 100MB folder	Optimize disk
APS/IBM Desktar 75GPX (45GB)	11	13	70
Maxtar DiamondMax 80 (80GB)	14	21	81
Maxtar DiamondMax Plus 45 (45GB)	15	25	107
Quantum Fireball Plus LM (30.4GB)	12	17	73
Seagate Barracuda ATA III (40GB)	10	14	62
Seagate U Series 5 (40GB)	12	17	74
Western Digital Caviar WD400BB (40GB)	11	17	69
G4/500 27GB internal drive	11	16	70
VST 20GB full height (external FireWire drive)	14	18	91

Behind our tests All results are in seconds. We tested each hard drive in a Power Macintosh G4/500 with Mac OS 9.0.4, 128MB RAM, a default system-disk-cahce of 4MB, and virtual memory disabled. The baseline internal-drive that shipped with the G4/500 was a 27GB Quantum Fireball Plus LM. For the disk-optimization test, we used Norton Utilities 5.0.3's Speed Disk with the Verify Media option disabled.
Macworld Lab testing supervised by James Galbraith

We also ran our benchmarks on an external VST 20GB full-height drive connected to the Mac via FireWire. Because the VST drive has a data-transfer rate of 15MBps, and the FireWire bus has a maximum throughput of 50MBps, we expected the ATA drives to be much faster – and they were, except for the Maxtor drives, which lagged a bit behind.

If you're looking to supplement your current hard drive, try adding an ATA drive on the internal ATA-bus instead of an external FireWire drive. It's faster, and an external 40GB FireWire drives cost around £350 – about £200 more than the most expensive drive here.

Macworld's buying advice
We preferred the Seagate Barracuda ATA III, which offers a large capacity and fast speed for a very affordable price. Cost-conscious consumers should also consider a drive that uses an ATA66 bus, such as the Quantum Fireball Plus LM.
Roman Loyola

Internal ATA hard drives compared

MANUFACTURER	MODEL	STAR RATING	PRICE*	CAPACITY	ROTATION SPEED	ATA BUS	PROS	CONS	DISTRIBUTOR	TEL	WEB
APS/IBM	Deskstar 75GPX	★★★★/7.3	£128	46.1GB	7,200rpm	100MBps	Good write speed; easy to install.	Expensive.	Ingram Micro	01908 260 422	www.ibm.com
Maxtor	DiamondMax 80	★★★★/7.1	£299	81.9GB	5,400rpm	100MBps	Easy to install.	Slow rotation speed.	MacWarehouse	0800 801 936	www.maxtor.com
Maxtor	DiamondMax Plus 45	★★★/6.2	£94	45GB	7,200rpm	100MBps	Easy to install.	Slow seek speed.	Micro Direct	0161 248 4848	www.maxtor.com
Quantum	Fireball Plus LM	★★★★/7.2	£97	30.4GB	7,200rpm	66MBps	Inexpensive; easy to install.	Slow bus speed.	Ingram Micro	01908 260 422	www.quantum.com
Seagate	Baracuda ATA III	★★★★/8.0	£124	40GB	7,200rpm	100MBps	Very fast; easy to install.	None.	Ingram Micro	01908 260 422	www.seagate.com
Seagate	U Series 5	★★★★/7.2	£99	40GB	5,400rpm	100MBps	Inexpensive; easy to install.	Slow rotation speed.	Ingram Micro	01908 260 422	www.seagate.com
Western Digital	Caviar WD400BB	★★★★/7.4	£140	40GB	7,200rpm	100MBps	Fast; easy to install.	None.	Action Computers	08701 66 44 44	www.westerndigital.com

* All prices exclude VAT

3D-animation how-to guide

3D Animation: From Models to Movies

Author: Adam Watkins
Publisher: Charles River Media
www.charlesriver.com
ISBN: 1-58450-023-9
Pros: Approachable introduction to most aspects of 3D; advice on industry intangibles.
Cons: Black-&-white printing loses some information.
Min specs: CD-ROM drive.
Price: £41
Star Rating: ★★★/6.7

The author of this book, Adam Watkins, is a lecturer in 3D Animation at the University of the Incarnate Word (UIW), which sounds like it should be in a Terry Pratchett novel, but is, in fact, in San Antonio, Texas.

The content is based on his experience in teaching animation, and, as such, aims to cover all the bases: from modelling to movies. The book's cover claims that it concentrates on three programs: Cinema 4D XL 6, Strata Studio Pro and LightWave, although you'll have to search to find the references to the latter two.

The book is divided into 15 chapters, with the first two dedicated to understanding the 3D workspace and 3D workflow. The next two chapters cover Cinema 4D XL's modelling tools, from polygons through to Subdivision Surface (HyperNURBS) modelling.

The later chapters on texturing and lighting contain a lots of useful information, such as faking time-consuming radiosity and caustics effects, but it's held back as the book is printed in black-&-white. And, some of the points being illustrated just don't come across. True, all the illustrations in the book – and more besides – are included on the bundled CD-ROM, and there's an eight-page colour plate section in the middle of the book, but it's no substitute for having the images in front of you on the page.

Chapters nine to twelve cover animation proper, and are a thorough overview of all the basics, from simple keyframing to inverse kinematics. It also contains lots of information about the concepts of, and how to achieve, believable movement. It concentrates heavily on the character animation side of things, although areas such as lip synching and facial animation are absent. This gives an idea of who this book is aimed at: strictly beginners, although the blurb on the cover states otherwise. The final chapters deal with compositing and special effects systems, although the discussion is limited to standards such as morphing and effects.

The final chapter is the most important in the book, since it bears the title Getting The Job. It outlines the various types of work available in the Computer Graphics industry from character animation to product visualization. It gives valuable advice on how to put together a demo reel to show to prospective employers – generally the make-or-break stage in securing a post. And it also contains lots of hints on intangibles, such as interview technique. Finally, it's backed up by a CD-ROM, which contains demo versions of Cinema 4D XL 6.0 and a fully working version of Strata 3D so you can follow along.

Macworld's buying advice
The version of Strata attempts to log on to the 3D.com Web site for registration, so an Internet connection is necessary. The two apps install their own examples – a good thing, since I couldn't find any tutorial support files on the CD. One oddity to note – on my 400MHz Power Mac G4, when the CD was open in the Finder, it, and other programs running, slowed to a crawl. All in all, it's a solid overview of the 3D process for anyone who's new to the game.
Tim Danaher
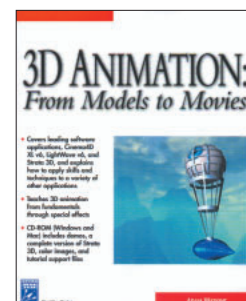
3D ANIMATION: From Models to Movies

E ven if you're the "sap in your family tree", to borrow an old Rodney Dangerfield line, it's fascinating to keep track of your pedigree.

Like most people, though, you probably haven't done much more than throw together a few photo albums or scrapbooks. Fortunately, Reunion 7.05 – Leister Productions' genealogy program – is the ideal repository for all things familial.

Although it can't do the data entry for you, Reunion sports a straightforward interface that almost makes the work seem enjoyable. Reunion's databases are based on collections of Family Cards, each of which contains information about one couple (see "Family ties"). In keeping with the times, Reunion doesn't balk at same-sex pairings, and there's plenty of room for birthdays, burial dates, and all the other juicy details about every family member – X-Files fans can even tag children as alien abductees. Our only gripe is the small type on many of Reunion's buttons, which some may have difficulty reading.

Reunion lets you link images, movies, and sounds to any family group or individual with a few mouse clicks, and you can export data in HTML format, so it's a snap to share family facts over the Internet – especially with Mac OS 9.0's iDisk.

Unlike previous versions, which made use of a separate utility for creating charts, Reunion 7.x lets you create five different types of charts directly within the program.
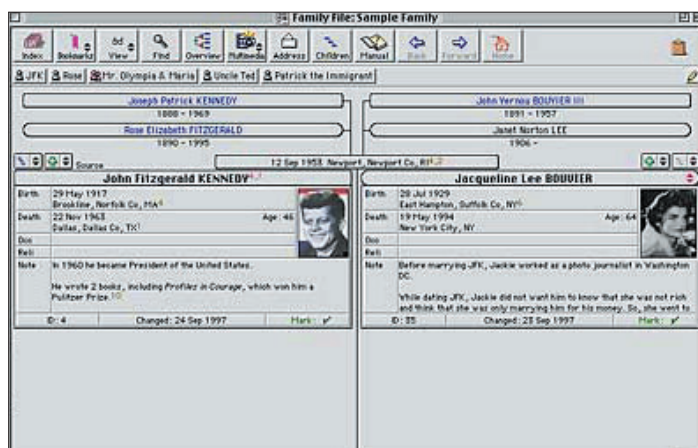
Family ties
Clicking on a parent's or child's name brings up their own family card, with space for current or future spouses and kids.

Thoughtful features abound. For example, Reunion automatically remembers the last 500 surnames and place-names that you entered – as soon as you've typed enough characters to match an existing entry, Reunion enters the rest of the name for you. You can determine if there's a blood relationship between any two people by selecting them from a list and clicking on a button. Reunion lets you generate lists of birthdays and other significant events, and it even calculates life expectancies based on actuarial tables. Thankfully, you can disable this feature if you get depressed easily.

The Reunion 7.05 CD-ROM comes with an electronic manual that clearly describes all the program's functions, and includes a well-designed tutorial. Leister Productions' Web site also provides a wealth of helpful information for genealogy fact-seekers on and off the Web.

Macworld's buying advice
Whether you have relatives on seven continents, or your whole clan fits into one house, Reunion is an excellent genealogical resource. With its ability to link to photos and other digital media, it's also an outstanding way to teach children about their heritage.
Franklin Tessler

D espite its hefty price tag, Charts Pro 1.0 was hard to beat for generating stunning 2D and 3D charts with a minimum of effort. Charts Pro 1.5 adds the ability to create animated charts for Web-based and other electronic presentations, though some will still find the price prohibitive.

Four new chart animations top the list of enhancements. The most innovative effect, Forecasting, lets you create charts that morph from one data set to another. However, you have to save the values that determine the animation's ending point in a tab-delimited text file; whenever the data changes, you must reselect the file.

New graphic elements include axes with variable thickness and optional "walls". You can now display the numeric values associated with data markers, and you can choose symbols to represent data points in 2D line-charts. Charts Pro 1.5 supports text rotation at any angle, and it lets you export charts in several new file formats.

Inside walls
Photos add pizzazz to a 3D chart created with Charts Pro 1.5, especially with its bundled illustrations.

Macworld's buying advice
Charts Pro 1.5 is an expensive one-trick pony, but it's more capable than ever. While many will welcome the program's novel animation-effects and other improvements, current users will justifiably balk at the steep cost of upgrading – but for brightening-up business presentations, it's hard to top.
Franklin Tessler

(S)expo appeal

At San Francisco's Macworld Expo, Apple unveiled a stunning PowerBook G4, revamped its Power Mac line with faster chips, CD-RWs and a SuperDrive, as well as releasing new software products for MP3 audio and DVD production. By Simon Jary

T he last several months of 2000 have been particularly challenging for Apple and our industry," said Apple CEO Steve Jobs during his keynote address at the start of January's Macworld Expo in San Francisco. "We've decided to start 2001 with a bang."

That bang explodes many of the complaints levelled at Apple in recent months, concerning ageing PowerBook designs and slow Power Mac processors. The new Titanium PowerBook G4 takes a leaf out of Sony's award-winning Vaio portable design-book, and goes several steps further. It is thinner, lighter, cheaper, faster and better-featured than a fully laden Vaio. It's the ultimate inflight-friendly laptop, and it's actually made of the same stuff as the sleekest spy planes. Apple has also revamped its Power Mac G4 range – increasing processor speeds, bus and system bandwidth, and the number of PCI expansion slots. Each now comes with a CD-RW drive, and the top model boasts an incredible DVD-R/CD-RW SuperDrive that can write DVDs of your iMovies or digital snaps that will work in your own home DVD player.

On the software side, Apple has released professional and consumer versions of iDVD software that makes creating those DVDs possible on an off-the-shelf Mac. And the company that brought you iMovie now brings you iTunes, which makes collecting, storing and burning digital music a whole lot friendlier. Also at Macworld Expo, Apple released an updated version of its current operating system, Mac OS 9.1 (reviewed on pages 54-55), and showed off a much-refined version of its forthcoming Mac OS X (pages 26-27).

Steve Jobs even laughed off anyone ready to write-off Apple or the PC industry – not so fast. "We don't think the PC is dying at all," said Jobs. "We think it's evolving." Darwin would be proud.

Actual size:
34.1cm wide

Actual size:
2.6cm thick
24.1cm deep

Magnetic lid button

Slot-loading DVD drive

PowerBook G4

Manufacturer: Apple
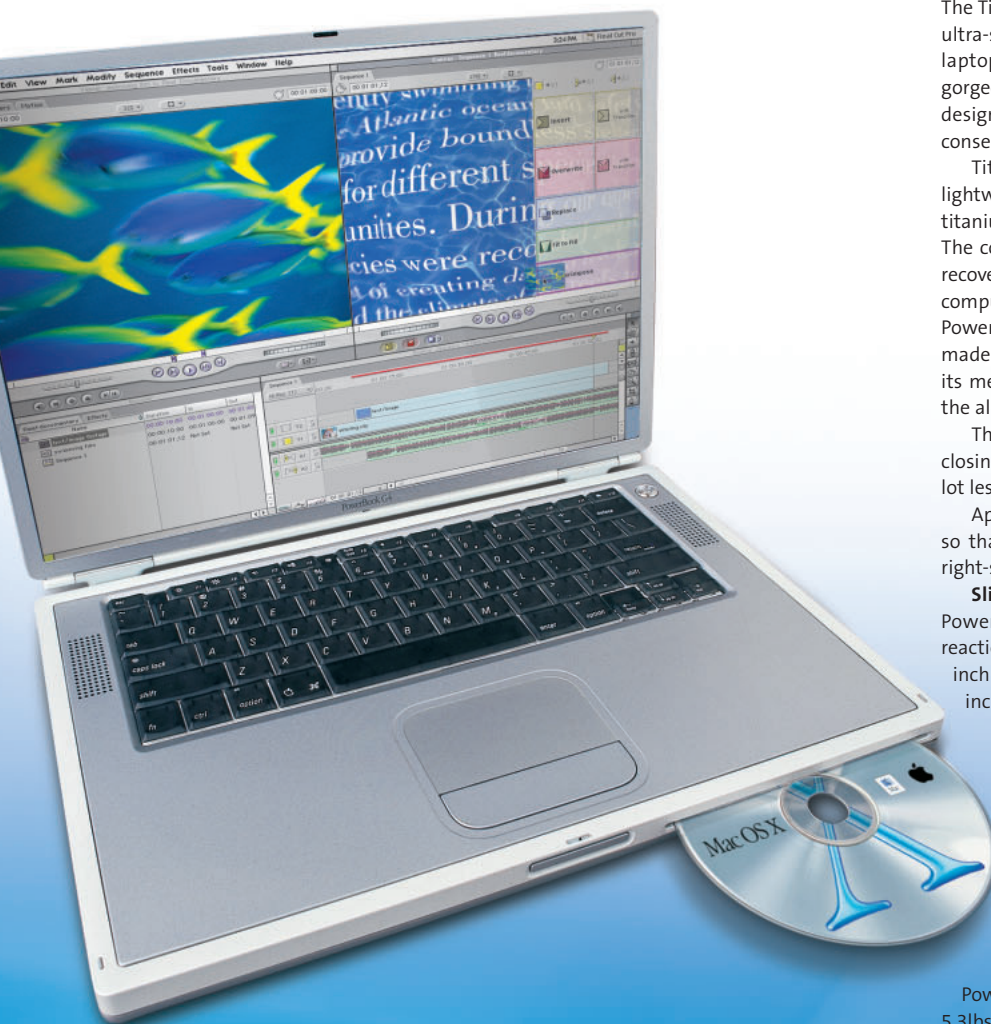(0800 039 1010)
www.apple.com/uk

Pros: Fast G4 chips; superb new Titanium design; 1-inch thick; lighter weight; slot-loading DVD drive; longer battery life; at least 128MB RAM; Mac OS 9.1.

Cons: Hard drives could be bigger; no flexibility on screen size or features.

Price: (excluding VAT)
400MHz: £1,899
500MHz: £2,499

PowerBook G4
A more powerful Mac in a more portable case

Apple's striking new laptop, the PowerBook G4, is faster and thinner than its predecessor, and has a larger screen and longer battery life. Although a great laptop, the PowerBook G3 was showing its age among the iMac's rainbow-coloured plastics and silvery Graphite gloss of the G4 Power Mac and Cube. Apple's top consumer portable, the iBook Special Edition, also beat it on several design levels and price point. It was time for a big change, and Apple has delivered – although not as radically as some of us have wished.

Ignoring 1989's giant typewrite-like Mac Portable, Apple was in large-part responsible for the popularity of mobile computing when it launched its stylish PowerBook in 1991. It held the No. 1 spot as laptop bestseller for years before Apple got sidelined by the Newton. Apple's lazily let Windows PC makers steal the PowerBook's glory and finally storm ahead in the portable design race – first by IBM's ThinkPad and recently by Sony's Vaio.

Laptop looker
The Titanium PowerBook G4 is Apple's late response to the ultra-slim Vaio subnotebook. On looks, Apple's anorexic laptop wins hands-down. The sleek titanium shell is gorgeous enough to egg-on those people who dish-out design awards, yet subtle enough to please the more conservative business user.

Titanium doesn't just look good. It's strong and lightweight – two key factors in a laptop. Apple boasts that titanium is stronger than steel and lighter than aluminium. The company even claims that the metal is "self-healing", recovering easily from the scratches that inevitably befall a computer that moves around with its owner. Not all of the PowerBook G4 is pure titanium; the darker base frame is made out of hardwearing carbon fibre. But Apple has taken its metallic theme into beautifully etched details, such as the aluminium power key and PC Card eject button.

The PowerBook does not borrow the iBook's neat lid-closing design, but the new magnetic latch is clean and a lot less likely to break off than those on competing laptops.

Apple has also flipped its logo on the PowerBook cover so that when you open the case, the Apple logo will be right-side up.

Slim pickings   Apple has managed to shave the PowerBook to an ultra-thin body – its most obvious reaction to the popular Vaio. The latest models are about an inch wider than the old G3 PowerBooks, but thinner – 1 inch versus 1.7 inches thick.

Apple's senior director of portables product marketing Greg Joswiak told Macworld that these new dimensions make the new PowerBook "more airplane friendly". Although it's wider, it's a lot less deep – making it easier to place on an airplane-passenger's seat-tray. Remember that Apple's original Mac Portable weighed nearly 16lbs, was wider than the chair, and used to break these trays!

With its thinner, titanium shell, the G4 PowerBook is also a lot lighter than its predecessor – its 5.3lbs (2.4kg) weight is nearly a full pound less to lug about.

Power

FireWire

10/100 ethernet

USB

VGA

S-Video

Modem

IrDA
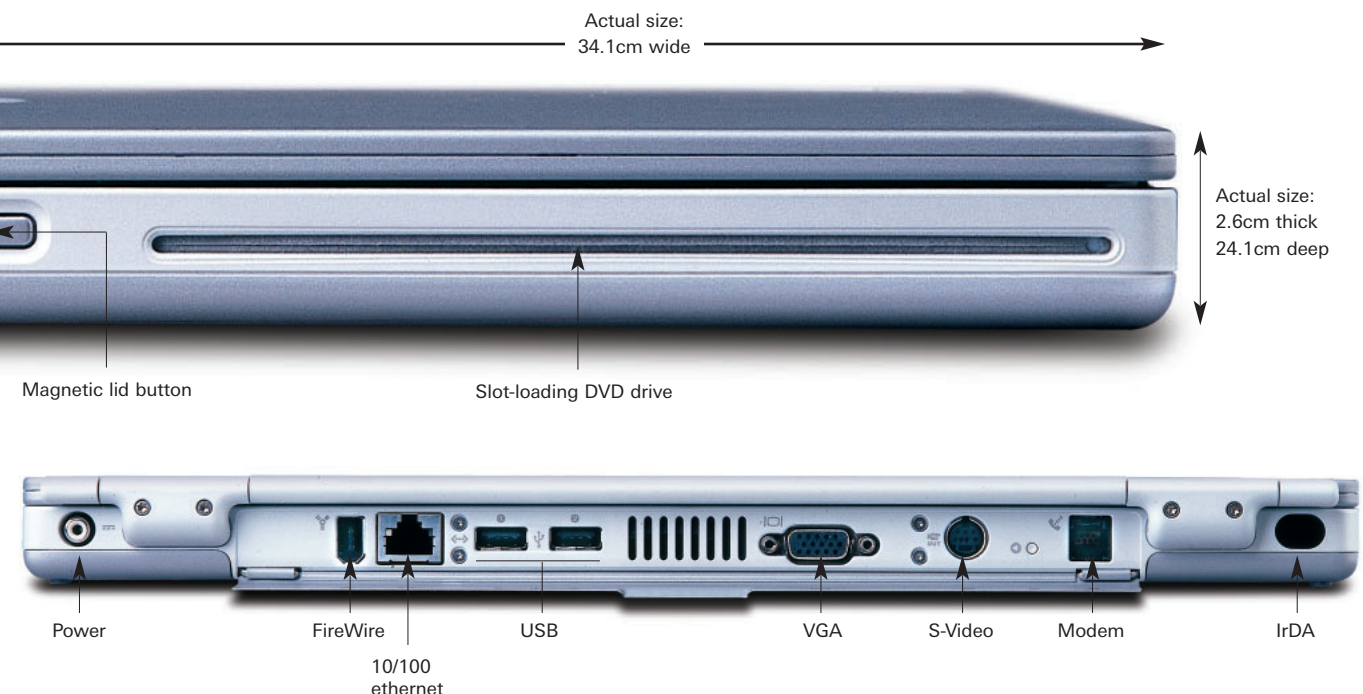
No compromise
That weight loss is crucial to portable users. The PowerBook is still heavier than the thinnest 1.7kg Vaio, but packs a lot more punch for the extra baggage. Apple argues that a Vaio user – who wants to gain all the connectivity options and DVD/CD features that the PowerBook offers – would have to add so many extras that the PowerBook would come out lighter in the end. Joswiak told Macworld that a similarly specified Vaio (with DVD-ROM drive, VGA port replicator, triple-capacity battery and AC power supply) would weigh in at 6.1 pounds (2.8kg) and cost hundreds of pounds more than the PowerBook.

Screen star   Apple eschews the add-on flexibility of the Vaio for a no-compromises laptop. So, where the Vaio Z600 features a 12.1-inch (1,024-x-768-pixel) screen, the PowerBook boasts a sharp "ultra-wide" 15.2-inch (1,152-x-768) display that's great for handling programs' ever-increasing number of palettes. ATI's Rage Mobility 128 chip is impressive – all the more so when utilizing Apple's closed-lid technology that gives the full 8MB of video RAM to a second display when the PowerBook's lid is down.

Less flexible   The difference in screen size is quite staggering, but many mobile-Mac users had actually been hoping for a smaller PowerBook – not a larger one.

The original PowerBook 100 weighed slightly less than the new model, but obviously included much less powerful features. Apple's short-lived subnotebook, 1995's Duo, weighed even less and had a smaller screen – but is still cited by many as one positive way forward that Apple has consistently resisted since. Listening to Apple now, it seems unlikely that the company has any plans for a smaller, lighter, less powerful notebook. No compromises means high-end performance and features, but also less flexibility – an ideal denied to mobile Mac users today.

Fine finishing
The precise etching of the PowerBook's aluminium Power-on button is representative of the finely crafted build quality.

Top-rank features   The PowerBook's slot-loading DVD drive is handily placed up-front and not annoyingly at the side like as it was previously. The Vaio's CD drive is external, and so adds to the Windows' machine's weight and space requirements. As in the G3 PowerBooks, the G4 features one PC Card slot on the left-hand side. You can also add an AirPort card under the battery.

The PowerBook G4 does away with its predecessor's dual bays for holding removable batteries or storage devices. Apple explains that modular bays are not necessary now that additional devices can be better added via FireWire or USB. Again, this keeps the size down.

The PowerBook comes with a full array of connectivity links (USB, FireWire, S-video, VGA, IrDA); although Apple has cut the number of FireWire ports from two to one. Ethernet is 10/100BaseT ethernet compared to the Vaio's slower 10BaseT connection.

Unlike the Vaio, the PowerBook features a full-size keyboard – which features flatter terracing due to its new magnetic holding. Like the Pro Keyboard, the PowerBook also includes a media-eject key. The trackpad and button are larger than those on current G3 PowerBooks.

Apple has moved the audio jack to the side, making it easier to attach headphones – especially when in flight. The power supply is smaller but similar in design to current iBook power supplies. There are speakers on the left and right of the keyboard (hiding an internal microphone), and the aluminium power button is to the far right of the keyboard at the top. Volume and brightness/contrast controls remain on the keyboard.

G4 power
Another big leap for the PowerBook is the inclusion of a full PowerPC G4 processor. When – or if – software developers really start taking advantage of the G4's Velocity Engine (AltiVec) speed boosts, PowerBook users – like their pro desktop compatriots – should notice a real performance hike. Apple claims that the G4 PowerBook is 60 per cent faster running its Final Cut Pro video-editor than the old G3. Apple also boasts that the 500MHz model is 30 per cent faster than an 850MHz Pentium III at Photoshop tasks.

A big hurdle to putting a G4 chip inside a PowerBook was making sure the laptop didn't overheat. The

Headphones

PC Card slot

PC Card ejector

AirPort antenna
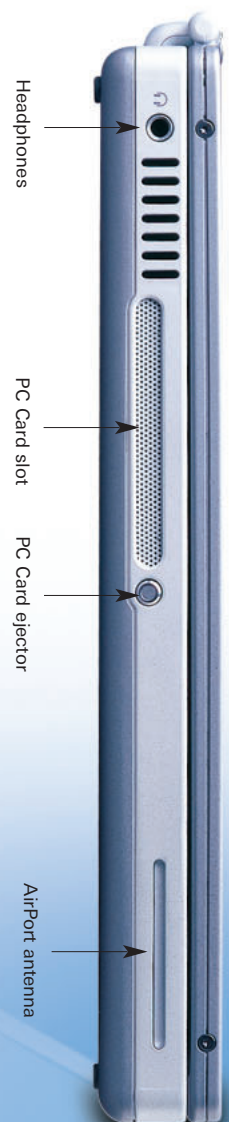
1989's Mac Portable

1993's PowerBook 165

1995's PowerBook Duo 230c

1999's 'slim-line' PowerBook G3

2001's Titanium PowerBook G4

PowerBook's G4 chip is Motorola's latest 7410 model, which runs cooler and uses less power than the old 7400, the G4 chip currently used in the Power Macs. Motorola designed the 7410 for use in the embedded market. According to Motorola, a 500MHz 7410 offers performance similar to that of a 500MHz 7400, but with power consumption equivalent to that of a 400MHz G4. The titanium case seems to distribute heat more evenly.

The PowerBook G4 comes in two standard configurations. The 400MHz model ships with 128MB of RAM and a 10GB hard drive. It sells for £1,899 (£2,230 including VAT). The 500MHz model – which sells for £2,499 (£2,935 inc. VAT) – features 256MB of RAM and a 20GB hard drive. Both configurations feature 1MB of backside Level 2 cache, a 100MHz system bus, 8MB of graphics RAM, and an ATI Rage Mobility 128 chip.

Standard software includes Mac OS 9.1, iMovie 2, iTunes, and usual Internet browser, email and Palm clients.

Longer life Despite running a much larger screen and powering DVD and a faster processor, Apple claims its single-battery life is up to five hours. In comparison, Sony admits that after just 1.5 hours you'll need to resort to an optional – more weight, more cost – second battery to get close to that time limit. Batteries – additional ones sell for £90 – can be swapped in Sleep mode.

While the lithium-ion battery is a new design, many of the longer-life improvements are down to software tweaks in Mac OS 9.1 (see pages 54-55). This extra juice adds another practical benefit to the size and weight reductions that Apple has achieved in its new laptop.

Choice decisions

The entry-level PowerBook costs £1,899, excluding VAT. The top-end model costs £2,499, and differs from the cheaper system in just three respects: processor speed, memory, and hard drive. If ultimate speed is not vital to you, you should consider topping up the entry-level system's memory to 256MB for under £200 extra.

10GB and 20GB sounds a lot of portable space compared to a few years ago, but if Apple is serious about video professionals using these laptops, it should increase hard-drive sizes considerably. A 30GB drive is available as an option on Apple's online store. External FireWire hard drives are another option – although these are obviously going to detract from portability.

If these prices seem a little harsh, then you should consider an iBook. The £1,275 Special Edition iBook – with zippy 466MHz G3 chip and DVD drive – is still a great Mac laptop, although you will need to bring the memory up from 64MB to 128MB. The entry-level iBook will also need a RAM increase, but – at £1,062 – its 366MHz G3 chip is plenty fast enough for most.

Sex, power and practicality

Apple must be praying that the Titanium PowerBook G4 doesn't go the same way as the Power Mac G4 Cube, which despite hitting high marks in the design world didn't match up to its sales expectations. While the PowerBook also scores top marks for design, its size reduction will bear real, practical results for its users. Apparently, not many of us cared to spend big to clear our desks of computer clutter with the Cube. But every single portable Mac user demands less weight and depth, and this new laptop boasts both.

The large screen, high-performance G4 chip and full tally of features makes for a fine laptop, but do not answer the many cries for a more flexible, smaller Mac portable. That said, when even these Duo diehards see the new PowerBook, they'll likely put up with the pro specs for such a great-looking, beautifully finished machine.

Apple's G4 PowerBooks – pro features in a slim case

Model	Price ex. VAT	PowerPC processor	Base RAM	Max RAM	Hard disk	CD DVD	USB ports	Fire Wire	Ethernet	56Kbps modem	Screen type and size
PowerBook 400	£1,899	400MHz G4	128MB	1GB	10GB	DVD	2	1	10/100	Yes	15.2" TFT
PowerBook 500	£2,499	500MHz G4	256MB	1GB	20GB *	DVD	2	1	10/100	Yes	15.2" TFT

* 30GB option available on online Apple Store.

While Apple has redesigned and added G4 chips to its PowerBook range, it has taken a different approach to updating its desktop professional systems. On the outside, nothing seems to have changed – the new G4 Power Macs look just like the old ones. But Apple has made significant changes inside the box – improving the logic board and memory controller, upgrading the processors and graphics chips, and adding an extra PCI slot. There's also CD-RW where once there was a DVD-ROM drive, and an amazing DVD-R SuperDrive where once there was DVD-RAM.

New models

As ever, Apple differentiates its Power Mac models by speed of processor. So there are now four basic systems to choose from, as well as a dual-processor model.

The entry-level Power Mac now boasts a 466MHz G4 processor. This system retains the 16MB ATI Rage 128 Pro graphics card that shipped with the previous series of Power Macs. Memory is doubled to 128MB, as this is Apple's recommended RAM amount to properly run its forthcoming Mac OS X operating system. And the hard drive is now up to 30GB (using a 5,400rpm Ultra ATA/66 drive). This model costs £1,199, excluding VAT.

One model up is the 533MHz Power Mac (£1,599), which drops the Rage Pro for Nvidia's 32MB GeForce2 graphics card, which delivers improved 2D and 3D graphics rendering. RAM is also 128MB, but the hard drive increases to 40GB (7,200rpm Ultra ATA/66).

You can also buy a version of this model that's powered by two 533MHz G4 chips. Although Apple re-introduced multiprocessing (MP) systems back in July 2000, the company seems to have gone partially cold on them again. This is almost certainly because of a shortage of the fastest chips – clearly there are plenty of 533MHz chips out there, but not that many 733MHz processors.

Multiprocessing speeds up software programs that have been rewritten to take advantage of a Mac with more than one chip in it. In Macworld Lab tests on the older 500MHz DP (dual-processor) Power Mac, we found the DP systems to be up to 60 per cent faster than their single-processor equivalents at several key Adobe Photoshop functions – but no faster running non-optimized

Power Mac G4
Speeds up to 733MHz, CD-RW and a SuperDrive

applications. Mac OS X will be much more conducive to MP Macs, so this model (costing only an extra £210) is well-worth considering if you use Photoshop a lot and are considering an early switch to Mac OS X from the end of March. For more details on MP systems, see our feature in October 2000.

After the MP fun, Apple offers a 667MHz Power Mac with 256MB of RAM, 60GB hard drive (7,200rpm Ultra ATA/66), and GeForce2 MX. This £1,999 model won't be available in the UK until March.

Also unavailable until then is Apple's top-end 733MHz Power Mac – which has the same amount of RAM and hard-disk space as the 667MHz model. It also features the GeForce2 as its graphics accelerator, and will cost £2,499.

Apple claims that the 733MHz Power Mac is 38 per cent faster than the previous fastest 500MHz G4, and 57 per cent faster than a 1.5GHz Pentium 4 Windows PC (using a sample of 120 Photoshop filters).

Power to burn

The 466MHz, 533MHz and 667MHz Power Mac G4s include a CD-RW drive with a 32x read, 8x write and 4x re-write mechanism. If you don't already own a similarly speedy or faster CD-RW drive, this addition adds real value to these machines. As it's internal, it will also save on desk space.

The 733MHz G4 ships with the "SuperDrive" – a combination DVD-R/CD-RW made by Pioneer. The SuperDrive will read, write and rewrite CDs just like the other internal CD-RWs, but will also read and write DVD-ROM and (incredibly) DVD-R discs. With a little help from Apple's free iDVD program, these DVD-R discs – loaded with your favourite iMovies and digital snaps – will play in standard consumer DVD players. This is incredible because, previously, this drive was available on its own for about £4,000 from Pioneer. Now, you get it for £2,499 – with Apple's most powerful Mac thrown in for free!

I would expect Apple to offer the SuperDrive as a build-to-order option when volume shipments bring unit prices down – so you'll be able to install it in cheaper models. Apple may even offer it in premium iMacs – possibly as early as February's Macworld Expo in Tokyo; see **www.macworld.co.uk** on February 22 for Expo coverage.

The DVD-R/CD-RW mechanism reads DVD at 6X, writes DVD-R at 2x, reads CDs at 24x, writes CD-R at 8x, and rewrites CD-RW at 4x speeds. Apple continues to offer a Zip drive as a build-to-order option for all Power Mac models at its online Apple Store.

The choice to add CD-RW and SuperDrive meant that Apple could not make the drives slot-loading – as on the iMacs and new PowerBooks.

Disc Burner reviewed   With Mac OS 9.1 (see pages 54-55) and a new downloadable system utility called Disc Burner, Apple has a new method of burning CDs. To create

a CD, insert a blank disc in the CD drive. In the dialog box that appears, enter a name for the disc and select the format (HFS+, iTunes, or MP3 CD) you want to create. An icon for the CD will appear on the desktop. You can then drag files and folders to the icon – in exactly the same way that you'd add files to another hard disk or Zip disk. When you're finished, select the disc and choose Burn CD from the Special menu. It's that simple, and surprisngly fast.

Disc Burner creates single-session discs. Once you create a CD, any unused space on the disc cannot be reused or recovered. This means that you must use an application, such as Roxio's Toast, if you're burning multisession rewritable discs.

At the moment, Disc Burner works only with the CD-RWs built-into these new Power Macs, as well as the top-end model's SuperDrive. Apple has promised to add drivers for the most popular third-party Mac-compatible CD recorders within the next two months. As soon as it does, there'll be little reason to not upgrade older Macs to OS 9.1 – unless you rely on multisession CD-RWs.

You can download Disc Burner (Int'l-English) for free from: **http://asu.info.apple.com/swupdates.nsf/artnum/n11966**.

Additions and subtractions

More slots   When Apple improved the logic board's memory controller (see box-out "Inside the box"), it was then able to remove the PCI bridge and use the space to add a fourth PCI slot. So now there's room in all the new Power Macs to add an extra video card or SCSI card on top of the cards you already own.

The GeForce2 – or Rage 128 Pro in the case of the 466MHz model – is placed in the AGP slot – newly upgraded from 2x to 4x. This is where the new Power Macs do differ externally from their predecessors, if only at the back – see the photo "Back to back" on the next page.

Audio issues   Apple has added a proprietary 16-bit connector, the Apple speaker minijack, for use with its new Pro Speakers. Otherwise, the optional speakers (£39) are the same USB-based Harman-Kardon speakers that ship with the G4 Cube. The sound system on the motherboard itself now has a 20W digital amplifier, driving the headphone output and the output for the new minijack. The headphone output is a standard 16-bit analogue jack that can support other third-party speakers.

However, as with the Cube, Apple has removed the analogue microphone jack. Apple claims that the Power Mac G4 supports audio input from USB microphones, and that most users are using those instead of older analogue mics anyway.

Bus speeds and cache   As discussed in more detail in the box "Inside the box", Apple has improved system and memory bus speeds from 100MHz to 133MHz in all the new Power Macs. The 667MHz and 733MHz models also feature new on-chip 256K level-2 cache and 1MB backside level-3

cache (see box "Not just faster – new chips"). The 466MHz and 533MHz models have 1MB of level-2 cache.

Networking remains at the impressive Gigabit Ethernet (1,000BaseT) introduced in the Power Macs last July.

Software   The new Power Macs come with Mac OS 9.1, iMovie 2, iTunes and the usual Internet browser, email and Palm clients. The 733MHz model also ships with iDVD authoring and encoding software.

Speed tests

We tested both the single-processor G4 Power Macs that are available to buy today: the 466MHz and 533MHz models. While the 533MHz system is just 7 per cent faster

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Not just faster – new chips

Officially, Apple describes the chips in its systems as the "PowerPC G4" without identifying the specific flavour. But examining the systems at Macworld Expo, we saw that the 466MHz and 533MHz models use Motorola's PowerPC 7410, the same low-power version of the G4 that drives the new PowerBook G4. The 667MHz and 733MHz models use the PowerPC 7450, a new chip that Motorola announced at the same time as Apple was unveiling its updated systems. The original G4 systems used the PowerPC 7400, which ran at a top speed of 500MHz for more than a year.

The 466MHz and 533MHz G4 chips feature a 1MB L2 cache running at half the speed of the processor. The 7450 in the 667MHz and 733MHz systems have 256K of on-die L2 cache running at the same speed as the processor. Additionally, the 7450 supports a large L3 cache, with a 64-bit datapath between the cache and the processor. The 667MHz and the 733MHz versions use a 1MB L3 cache located a short distance from the processor.

The 7450 is not just a speed revision. In addition to an on-die L2 cache and a L3 cache, the 7450 uses Motorola's MPX system bus to boost memory bandwidth to more than 1GB per second. It also has an enhanced version of the AltiVec vector-execution unit – which Apple calls "Velocity Engine"– that can dispatch two instructions to any of the four vector execution units on the processor.

David Read

Mac model	Speedmark 2.1	Photoshop 5.5 (results in seconds)		Quake III	SoundJam 2.5.2
		Gaussian Blur 10	Unsharp Mask 2.3	Frame rate (normal)	MP3 encode
Power Mac G4/533	168	16	15	66	200
Power Mac G4/466	157	22	21	46	200
Power Mac G4/500	157	21	20	41	150
	Longer bars are better.	Shorter bars are better.	Shorter bars are better.	Longer bars are better.	Shorter bars are better.

Speedmark 2.1 scores are relative to those of an iMac 350MHz, which is assigned a score of 100. Photoshop results are in seconds. Quake scores are in frames per second. SoundJam scores are in minutes:seconds. We tested each system with Mac OS 9.1, 128MB of RAM, a default system disk cache, and virtual memory enabled. We set displays to 1,024-x-768-pixel resolution and 24-bit colour. We tested MP3 encoding with an audio-CD track that was 9 minutes and 25 seconds long, and converted it using a default setting of 128Kbps in SoundJam. For more information on Speedmark, visit **www.macworld.co.uk/speedmark**. Macworld lab testing by Jim Galbraith and Jason Cox.
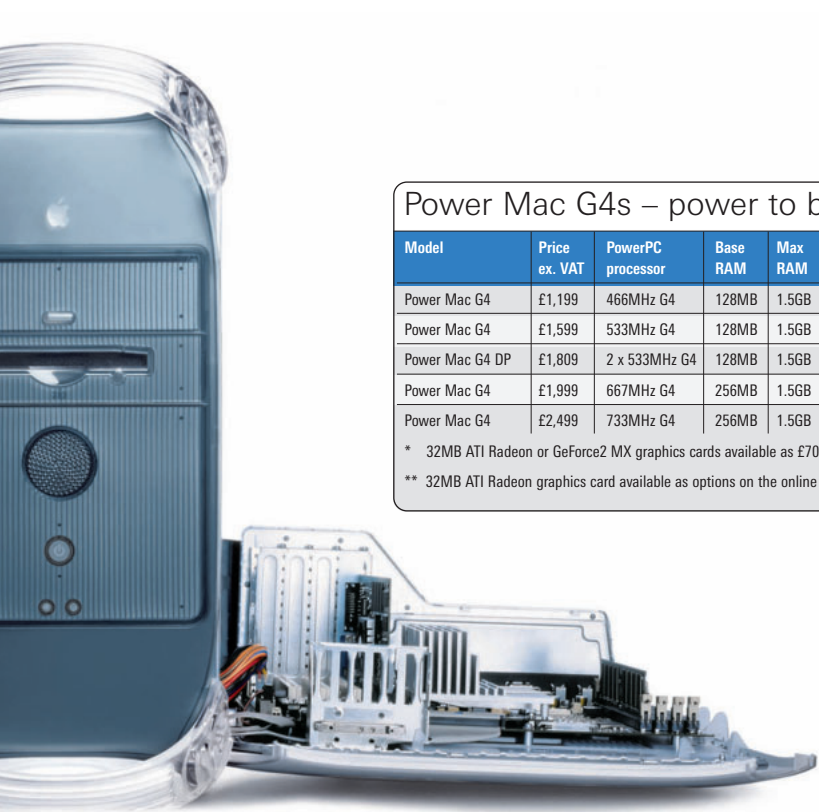
Power Mac G4s – power to burn

Model	Price ex. VAT	PowerPC processor	Base RAM	Max RAM	Hard disk	CD DVD	USB ports	Fire Wire	PCI slots	Ethernet	56Kbps modem	Graphics card
Power Mac G4	£1,199	466MHz G4	128MB	1.5GB	30GB	CD-RW	2	2	4	10/100/1000	Yes	16MB RAGE 128 Pro *
Power Mac G4	£1,599	533MHz G4	128MB	1.5GB	40GB	CD-RW	2	2	4	10/100/1000	Yes	32MB nVidia GeForce2 MX **
Power Mac G4 DP	£1,809	2 x 533MHz G4	128MB	1.5GB	40GB	CW-RW	2	2	4	10/100/1000	Yes	32MB nVidia GeForce2 MX **
Power Mac G4	£1,999	667MHz G4	256MB	1.5GB	60GB	CD-RW	2	2	4	10/100/1000	Yes	32MB nVidia GeForce2 MX **
Power Mac G4	£2,499	733MHz G4	256MB	1.5GB	60GB	DVD-R	2	2	4	10/100/1000	Yes	32MB nVidia GeForce2 MX **

* 32MB ATI Radeon or GeForce2 MX graphics cards available as £70 options on the online Apple Store.

** 32MB ATI Radeon graphics card available as options on the online Apple Store, or subtract £70 for 16MB RAGE 128 Pro.

than the old top-end 500MHz G4 in overall performance terms, its Quake III frame rates are an amazing 61 per cent better (see "New Power Mac G4s tested"). The new Nvidia GeForce2 MX clearly rocks at 32MB, while the few extra megahertz and faster system bus have notched performance levels to an expected level.

Although its processor runs 34MHz slower than the previous top-end system, the 466MHz entry-level G4 Power Mac nearly exactly matches the old 500MHz model – put that down to the 133MHz bus. The graphics don't take-off like the 533MHz model's because Apple has kept ATI's 16MB Rage 128 Pro graphics card for this system.

Inside job
Apple's internal improvements to its G4 Power Macs make these systems faster and more adaptable to third-party options, such as AGP 4x cards and space for an extra PCI card. When the 667MHz and 733MHz chips are available, Apple will have a superb top-end to its pro desktop line-up. The 733MHz model's SuperDrive is especially exciting, and is a first for any type of personal computer.

The general loss of multiprocessing options is a shame. I expect Apple to add these at a later date when chip supplies rise. In the meantime, third-party processor-upgrade manufacturers offer MP options in Apple's place.

Prices remain pretty much the same as before, but Apple's added features make these Power Mac G4s bargain deals – especially the 466MHz entry-level model.

Inside the box

The CPU itself still resides on a daughtercard that connects to the motherboard using the same "sawtooth" connector in the previous Power Mac G4 generation. Apple ROMs still reside on the motherboard, so upgrades for this model remain a relatively easy process.

Above the daughtercard is a large heat sink covered by a wide plastic cover. At the back of the heat sink is an exhaust fan that draws air under the plastic cover, along the heat sink, and out the back of the machine.

Faster bus   All new Power Mac G4 systems come equipped with a 133MHz system bus. A system bus carries data around your computer; for instance, between the memory, processor and graphics card. Obviously, the faster, the better. Previously, G4 Power Macs ran a system bus at 100MHz, so the incremental speed boost is welcome – and many would say overdue, as well.

Memory controller   The motherboard also features what Apple product manager Jesse Stein described as a "killer memory controller". It now controls the memory, FireWire, the PCI system – including the 4x AGP controller – and the Gigabit Ethernet. Stein characterized it as the Mac's high-bandwidth I/O chip. A separate chip handles USB connections.

Faster RAM   The new memory controller supports PC133 RAM. Faster than PC100 RAM, PC133 has slowly become the PC industry standard over the past year. The motherboard has three DIMM slots, each of which can accept up to a 512MB DIMM. So far, Apple has not commented on which variety of PC133 RAM is required, but it appears that the systems ship with CAS-3 RAM.

Faster PCI   Apple has embraced 4x AGP – the previous systems used 2X AGP to drive the video display – and added a fourth PCI slot. The PCI system has been updated to support 33MHz, 64-bit transfer speeds and a feature called "write combining", where write commands are collected and sent over the PCI bus in one burst.

Stein said that Apple has tested the PCI system running at a sustained rate of 215MB per second and in bursts of 260MB per second. That's compared with a sustained rate of 100MB per second in Apple's previous systems.
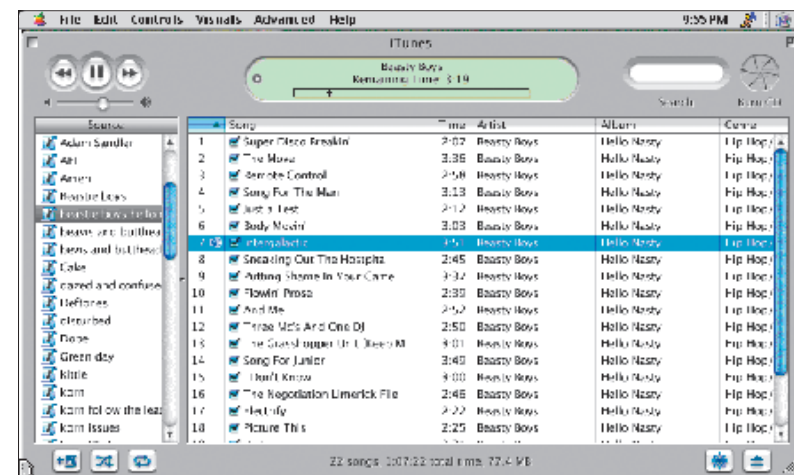
The 133MHz system bus is probably the biggest boon to Macintosh graphics, said Chris Bentley, project team lead for Mac 3D drivers at ATI Technologies – adding that no software vendor needs to do any work to take advantage of it.

The write-combining feature, he said, is particularly useful for QuickTime. However, he said the 4x AGP slot is really a future benefit, because no applications are currently facing bottlenecks on the slower AGP bus.
David Read

Back to back (left: Previous Power Mac. Right: New Power Mac) Above the five slots (AGP at top, then four PCI), the interface plate has also been rearranged to include a further air vent. The two USB and FireWire ports and ethernet port move down, while new audio ports move to the top. The analogue audio-in port has been dropped, in favour of USB-based solutions.In its place is a speaker minijack for connecting Apple's Pro Speakers. An analogue audio-out port remains.

iTunes
Digital music just got a whole lot easier

I was minding my own business doing my homework – it was my Mac-head mother, calling from Macworld Expo, San Francisco. She loudly exclaimed that there was this exciting new product from Apple called iTunes, and that I had to download it immediately. iTunes is a program that can organize all of my digital music, strip songs from my CD collection, create psychedelic light shows, burn my own custom CDs, and tune into Internet radio. Best of all, iTunes is free.

What kind of things have you ever actually got for free? In particular, something free that came from a company other than the one for which you work? (If you happen to work for Apple, please disregard the previous sentence. Furthermore, free cologne samples at the store or brochures from the Jehovah's Witnesses do not count; nor do free refills of Sprite at McDonald's.)

And have you ever got anything really good for free? If you have, it must been a very rare occurrence; or you have Napster, which, needless to say, is one of the coolest applications ever, and the main point of having iTunes in the first place.

If you've already purchased the similar SoundJam ($39 for the full version from Casady & Greene, www.soundjam.com), that's too bad – because iTunes is great and doesn't cost a thing. This is especially important to me as a 14-year-old, as money is something of which I have a limited quantity of. There are some features that SoundJam has over iTunes, but none so significant that a teenager would want to pay for them.

When I went to the Apple Web site to get it, I soon discovered that iTunes works only with Mac OS 9.0.4 or better. Mum came to the rescue with a little assistance here and we upgraded my iMac to OS 9.1 immediately.

Once I installed the new system on my computer, I finally got to download iTunes. Installation was so easy. What was really cool was that, when I got it on my iMac, it automatically took all of my MP3s and put them into the iTunes music library. Then it left me to do only one thing – organize them into play lists inside the program. The library puts every piece of digital music in order; and it has a search feature so you can hunt down a certain song, and drag that found track into a play-list and listen to it. Alternatively, you can play it directly from the library. It also has Shuffle and Repeat featured for your play-lists. Every list has a Burn CD button, so you can record your play-lists onto CD.

iTunes rips tracks from CDs at nearly 7x – the fastest I've ever seen. Right now, only owners of the very latest Macs released with built-in burners are able to burn CDs via iTunes. Apple promises to release the drivers that will work with third-party CD burners in the next two months – but I'm not holding my breath, knowing Apple..

Then I went completely and utterly insane loading music onto my iMac. In fact, I stripped so many songs from my CD collection that I used up all of my iMac's hard-disk space – even with the tiny MP3 files! – and had to delete some old computer games to make room for more. As you can see, I live for music. There are now hundreds of songs in my music library. All I need are some Harmon Kardon Sound-Sticks, and I'll really be set up.

You can also tune into Internet radio with iTunes, and listen to songs from various genres, commercial-free. There are hundreds of Internet radio stations from which to choose: for example, Fem-Folk-Rock, Hardcore-Punk, Hip-Hop, Smooth Jazz, etc. You're sure to find one that fits your musical taste. If only you could download a great song when it's playing on a radio station.

But the best bit of all – the grand finale of features – is the kaleidoscopic Visuals function. While you're playing your music, you can click the snowflake icon on the lower right-hand corner of your screen and let yourself be hypnotized by 2001-like psychedelia. This virtual acid trip puts a lava lamp to shame. Images swirl before your eyes to the beat of the music. There's a different kaleidoscope effect and different colours for each song.
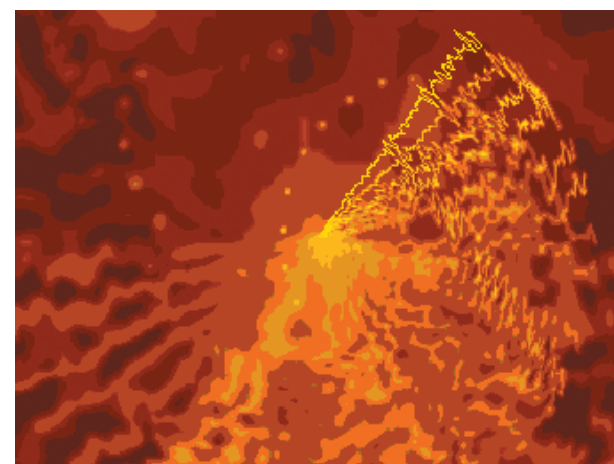
Macworld's buying advice
Everything about iTunes is so incredibly easy, it's amazing. It was easy to download, and I had very little trouble figuring out how to use it as everything is pretty self-explanatory and well organized. If you're not familiar with similar types of programs, such as SoundJam, you might run into problems – so it's great that the Help menu is there for MP3 novices.

I have to admit, I'm not the Mac-head my mother is. In fact, I often enjoy playing games on my best friend's PC. However, iTunes has made me much happier about being a Mac user. I'm going to tell all my friends who have Macs to download this program as soon as possible, because I know they'll love it as much as I do.
Trevor Nilsen

*(Top) Music manager
iTunes lets you convert music CDs to MP3 files, create personal playlists, burn your own music CDs, and listen to hundreds of radio stations on the Internet.*

*(Bottom) Crazy visuals
iTunes doesn't just help you listen to music… now you can watch your tracks dance to computer-generated graphics.*

Digital-music maestro

iTunes
Publisher: Apple
www.apple.com/uk/itunes/
Pros: Free; CD-burning features to come; groovy graphics; simple to use; fast.
Cons: Visuals plug-ins would be welcome; CD-burning features extremely limited right now.
Min specs: Mac OS 9.0.4
Price: Free download.
Star Rating: ★★★★/8.5

Your Mac, your way

Customize your Mac and applications for a completely personal experience. By Christopher Breen

Can you imagine a place where automobiles come only in black, ice-cream shops carry nothing but jamocha almond fudge, and all the Village People dressed as construction workers? Who would want to live in such a drab land?

Thankfully, our world offers myriad choices. Just look at the wide variety of Macs available to us – an indigo iMac for Ivan the librarian, marine-biologist Molly's Power Mac G4 Dual Processor, and young Lauren's Key Lime iBook. We are fortunate to have a great many remarkably colourful and configurable Macintosh options.
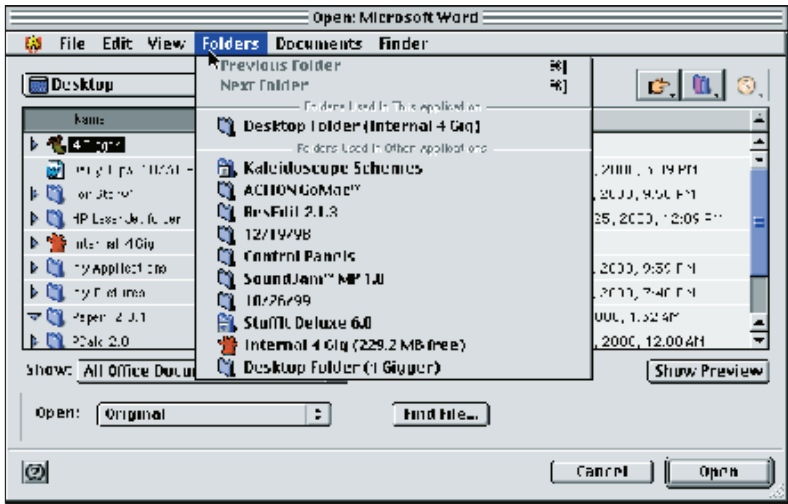
Launch into action
Power On Software's Action Files 1.5.4 adds more-extensive navigation controls to Open and Save dialog boxes than Apple's Navigation Services does.

But those options don't end with the hue of the case or the amount of installed RAM. No computer – PC, Palm, or Psion – is more customizable than the Mac, whether you'd like it to conform to the way you work or simply want your desktop pattern to match your mood. Granted, the forthcoming Mac OS X will provide the greatest face-lift the Mac has seen in over a decade. But while you're waiting for its final release, why not take matters into your own hands? With the help of a pocketful of shareware utilities, a smattering of commercial applications, and some system and application tweaks, you can make your Mac your own.

Make it work your way
You may be perfectly content to dig through your Mac's hard drive to launch applications; rummage through volumes and folders in Open and Save dialog boxes; traipse to the menu bar every time you want your Mac to execute some trifling task; and repeat a series of clicks and drags to perform the same operation many times. But we're here to tell you there's a better way. These customizations are guaranteed to make your Mac more productive.

Everything at hand
Why wait for OS X's Dock? Files, folders, and applications that you routinely misplace can be easily found – and launched – with the help of some classic Mac OS utilities. (See "16 Mac makeovers" for further details about the programs discussed in this article.)

Out to launch Included with Mac OS is Launcher, a program you can use to open applications, files, documents, and URLs with a single click. It doesn't do much more than that, though. And while you can create up to eight separate categories of Launcher items – arranged as tabs – the process is unintuitive, and Launcher takes up a fair chunk of desktop real estate.

If you're looking for more-powerful and less-obtrusive launchers, you'll find plenty of third-party utilities that let you easily organize your favourite applications and documents into tidy, movable docks. James Thomson's DragThing 2.9 ($20, www.dragthing.com) and Aladdin Systems' DragStrip 3.7.1 (£21; Softline, 01372 726 333) allow you to place all of your favourite goodies – including applications, documents, control panels, disks and servers, folders, and URLs – in floating docks.

In addition, both provide docks that, as Apple's Application Switcher palette does, display all currently running applications. Of the two, DragThing is the more refined, featuring attractive palettes, sound, hot-key support, and a number of helpful AppleScript commands for controlling the program's docks. (See "Control tabs".)

Space savers Sig Software's DropDrawers 1.2.6 ($15, www.sigsoftware.com) is another useful launching utility. Instead of employing docks, DropDrawers lets you place your favourite items, including clippings files, in floating "drawers" that open and close when you click on their handles.

You can also try Power On Software's powerful Action GoMac 2.0.3 ($30, www.poweronsw.com). Like Windows' Start menu and Task Bar, Action GoMac displays running applications and lets you launch your favourite applications and files from a palette that runs along the bottom of your Mac's screen. A unique feature allows you to quit running applications without switching to each one. Just select Quit and then the application's name from a pop-up menu, and that application quits in the background.

Let your fingers do the working Some of us dislike reaching for the mouse, either because we think it wastes time or because the ergonomics fairy has warned us against it.

Two launching utilities that rely on the keyboard rather than the mouse are MindVision's MindControl 1.1 ($19, www.mindvision.com) and Stefano Ghielmi's SpeedApp 2 ($15, http://space.tin.it/clubnet/sghielmi/index).

With MindControl installed on your Mac, you press ⌘-` to reveal a window that contains your favourite applications, documents, URLs, email addresses, recent applications, documents, and servers. You'll also find common commands such as sleep, shut down, and restart. Use the mouse or the Mac's arrow keys to access these items.

MindControl also places a command line at the bottom of your screen where you can enter text. To launch an item on your Mac's hard drive, begin typing the name of the item you'd like to open – or the abbreviation you've assigned to it. MindControl fills in its name; just press the return key to launch that item.

SpeedApp offers the same command-line feature in a more intuitive way. Unless you configure MindControl in the Command window, the program requires that you type the complete name of the item you wish to open, beginning with the first letters of the application. For example, Adobe Photoshop is the default name to type for Photoshop. SpeedApp – which is limited to opening applications – allows you to type any portion of the application's name.

Better dialog boxes
Your desktop isn't the only place you can enhance navigation. Most of us spend a fair amount of time shuffling through Open and Save dialog boxes, wishing for a more efficient way, for example, to put files in the folders where we always put them.

Many Macintosh users hoped that Navigation Services – introduced with Mac OS 8.5 as a new way to view and move through Open and Save dialog boxes – would offer a greatly expanded set of navigation options. Dialog boxes that take advantage of Navigation Services do provide quicker access to mounted volumes and often-used documents and folders, but they don't provide the wealth of navigation options found in the Finder, such as the ability to produce a file's Get Info window.

Fast filing St Clair Software's Default Folder 3.0.7 (St Clair Software, www.stclairsoft.com) and Power On Software's Action Files 1.5.4 (£38; Softline, 01372 726 333) provide some solutions. Default Folder places additional commands in Open and Save dialog boxes – commands for producing a file's Get Info window, as well as for renaming and trashing files.

It will also display a default folder you've designated when an Open or Save dialog box appears for the first time after an application launches. This is a real time-saver if, for example, you plan to save all your Microsoft Word documents in a particular folder.

Action files offers even greater enhancements. (See "Launch into action"). In addition to the same features as Default Folder, it gives you the ability to sort files by name, size, kind, and date; change file and folder labels; create an alias of a file or folder; and even resize these previously nonscalable dialog boxes.

More from your menus
Menus provide another way to easily launch applications and locate favourite files on your Mac. Each new version of Mac OS has made menus more powerful by increasing the number of keyboard equivalents for common tasks – for example, creating an alias or moving items to the Trash. But menus can be made to do more, with utilities such as Jerry Du's FinderMenuTuner 1.2.2, Connectix's CopyAgent 1.0 (£26; Computers Unlimited, 020 8358 5857), and Power On's Action Menus 1.0.2 (£29, Softline, 01372 726 333).

Navigate with ease
FinderMenuTuner is a control panel that assigns additional keyboard commands to Finder menus – a boon for those who've longed to press ⌘-T to empty the Trash.

CopyAgent, though primarily a tool for enhancing Finder copying, also makes menu navigation easier with its Keyboard Power component. Using Keyboard Power, you can access Finder and application menus in the Mac's menu bar with keyboard shortcuts: for example, just hold down control-shift-F to select the File menu. Once you select a menu, you can use another keyboard shortcut to choose a command within that menu – such as control-shift-O to select Open – or the arrow keys to move from one menu item to another.

Action Menus is the be-all and end-all of menu customization utilities. It not only allows you to assign keyboard commands to menu items, but also creates additional menus that display applications, files, folders, and servers you've recently accessed – complete with hierarchical submenus. And you can place items in the Apple or Applications menu by dragging them there from the desktop.

Mega-macro programs
If you repeat some tasks frequently on your Mac – copying blocks of text from your word processor and pasting them into different fields in your database program, for example

Y ou've changed your hairstyle, diet, and taste in music dozens of times in the past five years. So why stick with the same-old Mac experience when you can customize it in these exciting ways?
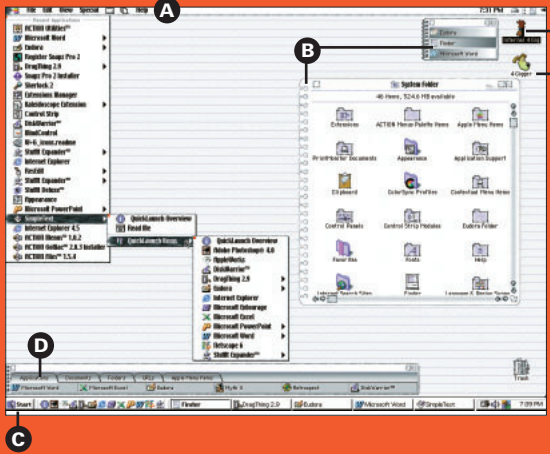
A Action Menus
Action Menus adds a number of new menus to the Mac's menu bar for tasks such as opening recent applications, documents, and servers.

B Kaleidoscope
Kaleidoscope (www.kaleidoscope.net) lends a spiral-notebook feel to the Mac's windows, scroll bars, icons, and menus.

C Action GoMac
Action GoMac's Task Bar feature provides an area for launching favourite applications and for switching between active applications. The Clock Tray includes a clock, a calendar, and a place where you add control-strip modules.

D DragThing
DragThing gives easy access to all your favourite items. And Mac OS 9's Application Switcher never looked as good as DragThing's Process Dock.

E IconFactory
IconFactory (www.pixelplace.com) is just great for beautiful and whimsical icons.

– you may long for a way to alleviate this drudgery. A macro program can automate many of these tasks.

You can use applications such as CE Software's QuicKeys 5.0 (£79; Computers Unlimited, 020 8358 5857), Westcode Software's OneClick 2.0, ($70, www.westcodesoft.com), as well as Binary Software's KeyQuencer 2.5.5 ($54; www.binarysoft.com) for simple chores – launching applications or creating keyboard equivalents for menu commands – but the forte of these macro programs is executing a series of actions at the click of a button or the press of a key.

Automate your actions QuicKeys is the easiest macro

Control tabs
From James Thomson's DragThing 2.9, you can launch nearly any file on your Mac's hard drive.
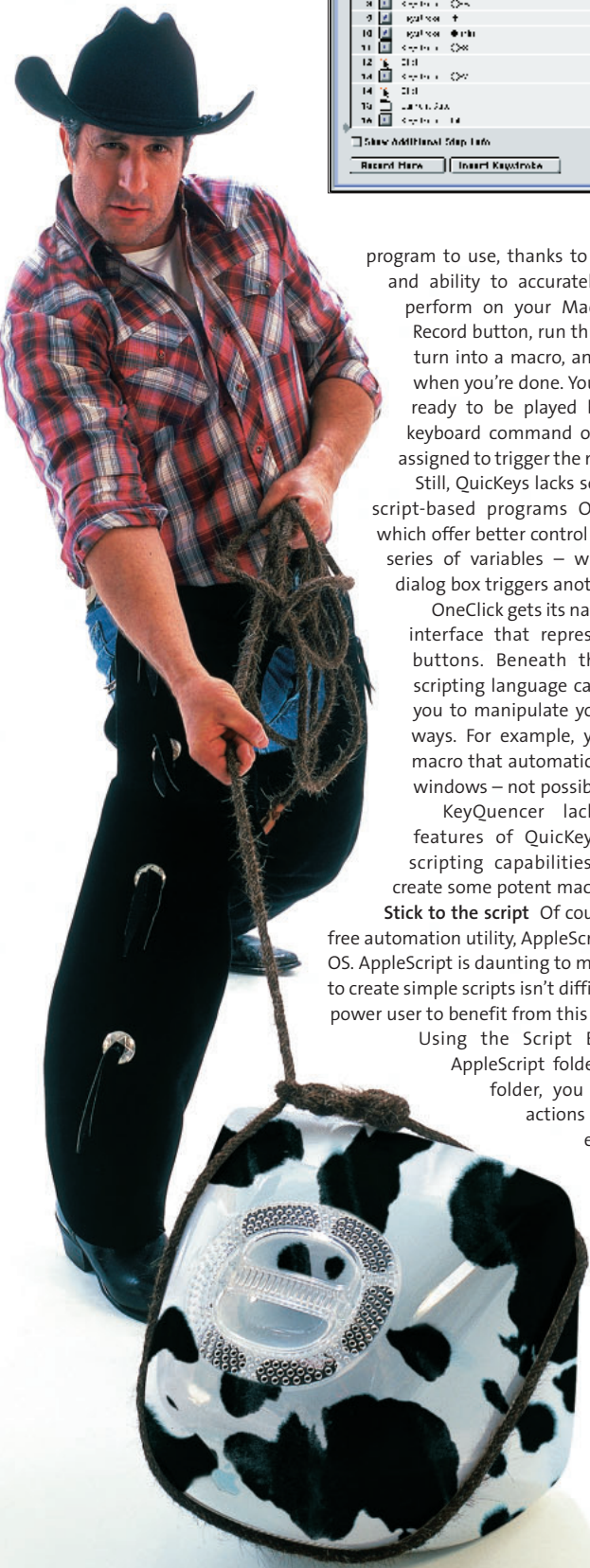
Macro-made
Why repeat a series of keystrokes and clicks, when you can record these actions one time and trigger them all with a macro utility, such as CE Software's QuickKeys 5.0?
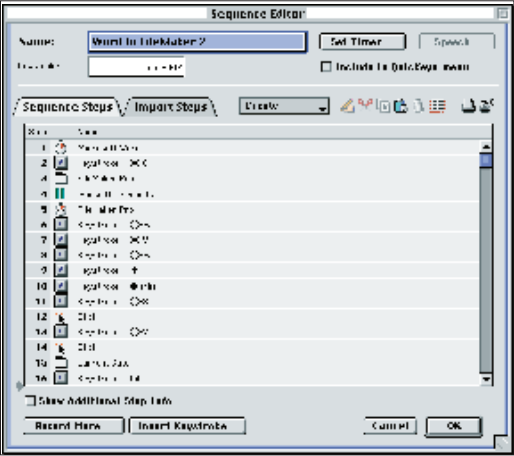
program to use, thanks to its icon-oriented interface and ability to accurately record the actions you perform on your Mac. Just click on QuickKey's Record button, run through the task you'd like to turn into a macro, and click on the Stop button when you're done. Your actions are recorded and ready to be played back when you press the keyboard command or on-screen button you've assigned to trigger the macro. (See "Macro-made").

Still, QuickKeys lacks some of the power found in script-based programs OneClick and KeyQuencer, which offer better control over actions that include a series of variables – when the appearance of a dialog box triggers another action, for example.

OneClick gets its name from the palette-driven interface that represents macros as clickable buttons. Beneath the simple interface is a scripting language called EasyScript that allows you to manipulate your Mac in many powerful ways. For example, you can create a OneClick macro that automatically closes browser pop-up windows – not possible with QuickKeys.

KeyQuencer lacks the action-recording features of QuickKeys and OneClick, but its scripting capabilities allow intrepid users to create some potent macros.

Stick to the script Of course Apple includes its own free automation utility, AppleScript, with every copy of Mac OS. AppleScript is daunting to many Mac users, but using it to create simple scripts isn't difficult. You don't need to be a power user to benefit from this excellent tool.

Using the Script Editor, found inside the AppleScript folder in the Apple Extras folder, you can record many of the actions you take on your Mac. For example, you can create a script that will clear up the clutter on your Mac's desktop and also display your files in alphabetical order.

First open Script Editor and click on the Record button; then switch to the Finder, hold down the option key, click on the Close box in the active window to close all windows, and select By

Name from the View menu's Arrange submenu. You can then save this script to the Apple Menu or your desktop as a classic applet.

You can also create simple AppleScripts to move items into the Trash, copy files from one buried folder to another, and turn the Appearance control panel's windowshade feature on and off. (To learn more about AppleScript, see "AppleScript for the Programming-Shy", Secrets, *Macworld*, November 1999).

Make it look your way
Having a more productive Mac may placate the pernickety office manager within us all, but a computer can be competent without being compelling. With a little effort – and the help of a couple of utilities – your Mac can be fun and functional.

Lovely to look at
With the Appearance control panel, you can change the visual elements of your Mac's interface, selecting desktop pictures and patterns, alternate system fonts, and hues for highlighting and menus. But if you want to alter your Mac in more profound ways, you need greater assistance: get Greg Landweber and Arlo Rose's Kaleidoscope 2.3 from this month's *Macworld* cover CD.

Total makeover Kaleidoscope is a control panel that allows you to load schemes that radically distort the appearance of windows, menus, buttons, icons, and progress bars. (See "Interface-lift"). Be advised: it may impede the performance of your computer or make it more prone to crashes. But with so many entertaining scheme options available, many users will be tempted to install it regardless of the consequences.

Many authors have created schemes that transform the Mac's interface into something resembling Windows 95, the Be OS, NextStep, a Palm Pilot, or even Mac OS X. (Apple's legal department has warned against replicating OS X's Aqua theme.) Hundreds of schemes are available from the Kaleidoscope Web site (**www.kaleidoscope.net**) and others. We liked RailHead Design's AquaX III Kaleidoscope scheme (**www.railheaddesign.com**).

Accessorize, accessorize Some Kaleidoscope scheme authors toss in icons to replace Apple's drab hard drive icons, but many do not. If you're looking for more interesting icons – whether or not you plan to use them in conjunction with Kaleidoscope – you can point your browser to IconFactory (**www.iconfactory.com**), the finest collection of free icons on the Web.

If you're aiming for an OS X – like look, consider one more visual enhancement: Greg Landweber's Power Windows 2.4.2 ($10, **www.kaleidoscope.net/greg**). With this program installed, when you drag a window across the screen, the entire window and its contents remain visible, not just the dotted outline. Plus, it can make windows translucent.

Custom-crafted applications
If you enjoy playing MP3 files on your Mac, you know that MP3 players include a variety of "skins" that change a player's appearance. But MP3 players aren't the only applications that support customization.

Beautify your browser In the latest releases of Microsoft Internet Explorer and Netscape Navigator, Microsoft and Netscape both supply the means to allow you to make their browsers reflect Apple's recent computer-case designs.

To style Internet Explorer 5 more like your Mac, just select Browser Color from the View menu and choose from colours such as Bondi blue, lime, PowerBook bronze, and

graphite. To change the way icons and text are displayed in the tool bar, control-click on the tool bar and select Icon & Text, Icon Only, or Text Only from the contextual menu. Then choose from the listed colours.

Netscape 6 includes a variety of themes that allow you to change the look of this venerable browser. Preview Release 3 includes the Modern and Classic themes: Modern has a rounded look reminiscent of OS X, and Classic's appearance resembles the traditional Netscape interface.
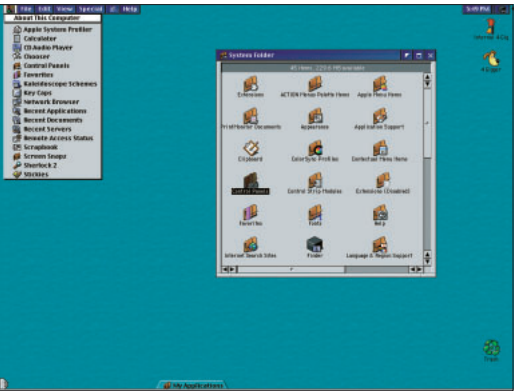
To apply a new theme, you simply select Apple Theme from the View menu and choose from the list in the submenu. This submenu also contains a Get New Themes command that prompts Netscape to connect to the Web and download any additional themes that become available.

Office remodelling You can't radically change Microsoft Office 2001's colour or icons, but some Macintosh users have found that the suite's Formatting palette lets you dispense with many of the program's tool bars.

To change the appearance of this palette in Microsoft Word, Excel, and PowerPoint, select Customize from the Tools menu, click on the Appearance tab, and choose either the Office 2001 Appearance option (which bears a slight resemblance to OS X) or the Mac OS Theme Compliant option (similar to the classic Mac OS). In the same window, you can choose to increase the size of icons in tool bars and in the Formatting palette.

Now hear this
Before colour displays, Macintosh users had few ways to tart up their computers. After all, you could create only so many interesting desktop patterns out of black-&-white pixels. However, one advantage the Mac had over its PC counterparts was its ability to play sounds (PCs were nearly mute back then). Mac folk took this advantage and ran with it, creating custom sound-effects and – using utilities such as Bruce Tomlin's impressive SoundMaster ($15, **ftp://macware.erehwon.org/pub/mac**) – linking them to events as varied as ejecting disks, emptying the Trash, and restarting the Mac.

Starting with Mac OS 8.5, Apple included the Appearance control panel, which contained a single collection of sounds tied to system events: Platinum Sounds.

Interface-lift
With Greg Landweber and Arlo Rose's Kaleidoscope 2.2.4, you can change many of your Mac's interface elements. Here, the NextStep scheme gives our desktop that retro look (bottom).

The last word
There are plenty of good reasons to change the ways your Mac looks and works: you can't wait for the cool new functions of Mac OS X, you'd like a better launcher than the one supplied by Apple, or you want your Mac's desktop to match your new earrings. Ultimately, it doesn't make a bit of difference why you want to customize your Mac.

What really matters is that you can alter the look and feel of your Mac simply because you have the power and desire to do so. **MW**

16 Mac makeovers

COMPANY	PRODUCT	PRICE	CONTACT	DESCRIPTION
Aladdin Systems	DragStrip 3.7.1	£21	Softline, 01372 726 333	Palette-based launcher utility
Binary Software	KeyQuencer 2.5.5	$54	www.binarysoft.com	Macro utility
CE Software	QuicKeys 5.0	£79	Computers Unlimited, 020 8358 5857	Macro utility
Connectix	CopyAgent 1.0	$39 (+$39 p&p)	www.connectix.com	Menu-navigation tool
Greg Landweber	Power Windows 2.4.2	$10/shareware	www.kaleidoscope.net/greg/	Window-appearance – changing utility
Greg Landweber and Arlo Rose	Kaleidoscope 2.2.4	$25/shareware	www.kaleidoscope.net	Appearance-changing utility
James Thomson	DragThing 2.9	$20/shareware	www.dragthing.com	Palette-based launcher utility
Jerry Du	FinderMenuTuner 1.2.2	$15/shareware	www.dragonone.com	Menu customizer
MindVision	MindControl 1.1	$20	www.mindvision.com	Command-line launcher utility
Power On Software	Action Files 1.5.4	£38	Softline, 01372 726 333	Dialog box enhancement
	Action GoMac 2.0.3	$30	www.poweronsw.com	Task-bar launcher utility
	Action Menus 1.0.2	£29	Softline, 01372 726 333	Menu customizer, navigation tool
Sig Software	DropDrawers 1.2.6	$15/shareware	www.sigsoftware.com	Pop-up launcher utility
St. Clair Software	Default Folder 3.0.7	$25/shareware	www.stclairsoft.com	Dialog-box enhancement
Stefano Ghielmi	SpeedApp 1.0.2	$15/shareware	http://web.infinito.it/utenti/s/sghielmi	Command-line launcher utility
Westcode Software	OneClick 2.0	$70	www.westcodesoft.com	Macro utility

• Smooth CD burns • Pro Keyboard shutdown • XPress toggling

Q&A/tips

Handy Mac tips and readers' questions answered. **By Christopher Breen**

Plug-in perplexities

Q Why won't Sherlock plug-ins install when I drag them on to a closed System Folder? Can I create a new channel for them?
James Schneider

A Sherlock plug-ins are those files that allow Sherlock to explore particular Web sites. Even though James Schneider followed Apple's advice to drag-&-drop these plug-ins on to a closed System Folder and then filed them in the Internet Search Sites folder within the System Folder, they never appeared in Sherlock 2's list of Internet sites.

Unfortunately, the sell-by date on the advice that James received has long since passed. With the original Sherlock (the version that shipped with Mac OS 8.5 and 8.6), drag-&-dropping Sherlock plug-ins to a closed System Folder did cause new search sites to appear within Sherlock. But with Sherlock 2 and OS 9, this is no longer the case.

To successfully add Sherlock plug-ins, you must do one of two things: open the Internet Search Sites folder and drag the plug-ins to the Internet folder that lurks within, or drag the plug-in directly into the open Internet pane of the Sherlock window (see screenshot "Such a drag", right).

Because I tend to add new search sites on a regular basis, I've created a separate channel for them. You can too, by choosing New Channel from Sherlock's Channel menu, giving your new channel a descriptive name – such as My Channel – assigning an icon to the channel, selecting Searching from the Channel Type pop-up menu, and placing additional search sites in this channel via the methods I described here.

Slow burn

Q My LaCie SCSI CD-RW drive – rated to write at 12x – seems able to successfully burn CD-Rs at only a measly 1x. When I attempt to burn at faster rates, Toast 4.1 sends up an ominous "buffer underrun" error, and my CD-R disc becomes a useless hunk of shiny plastic. What causes a CD-R burner to fail?
Gerard Walschap
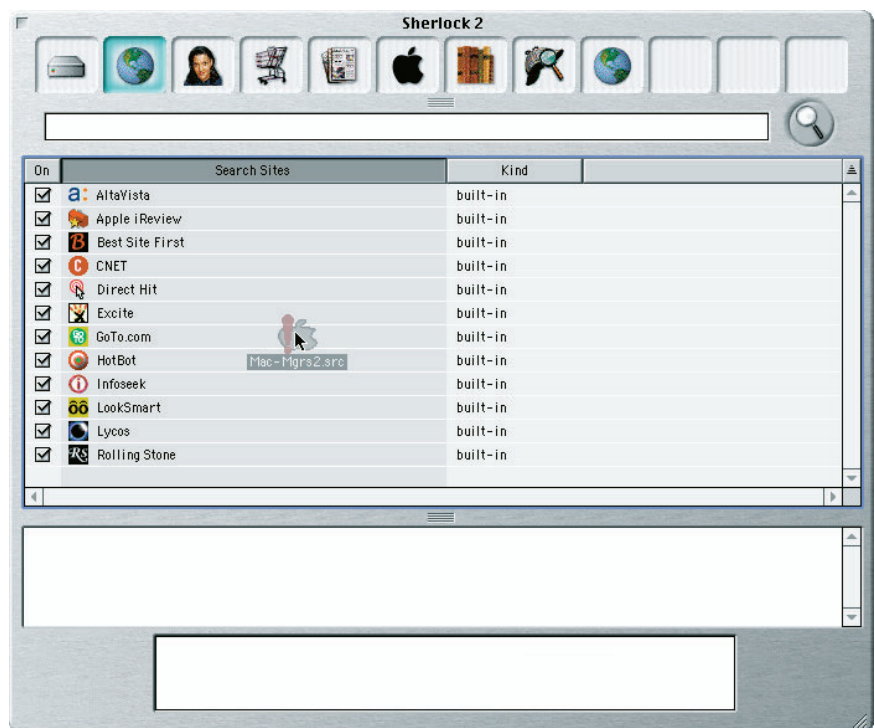
A Naturally, my heart goes out to Mr Walschap, but the depth of this sympathy doesn't diminish my suspicion that he may not have done all he could to prepare his Mac for a successful burn.

To increase the odds of walking away with a newly burned CD, he should: Copy the CD-ROM to his hard drive and then to the burner, for the simple reason that a hard drive can deliver data far more quickly than today's fastest CD-ROM drive.

Shutdown background applications and networking services – file sharing or automatic email retrieval, for example – during the burn. Such background activities can easily interrupt the delivery of data to a CD burner, drain the burner's buffer, and result in underrun errors.

Allot a large-enough RAM buffer in Toast to prevent these errors. Toast allows you to buffer data to the Mac's RAM for additional short-term storage, so why not take advantage of it!?

Such a drag
To install a new Internet Search Site in Sherlock 2, first open Sherlock and then drag-&-drop the site into its main window.

See the cover CD for shareware featured in Q&A.
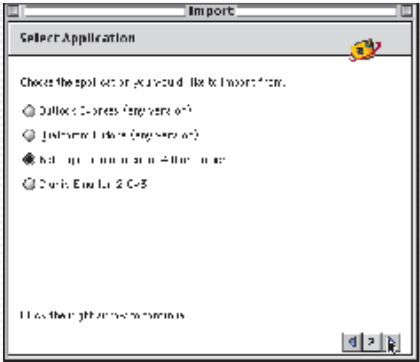
Express in the middle
To export addresses from Netscape Navigator to Microsoft Express, see Import Addresses, below.

In summary, keep it simple. Using Apple's Extensions Manager or Casady & Greene's Conflict Catcher, create a base set of only those extensions and control panels necessary to perform the burn; the CD-R-burning software should be the only active application during a burn. Burn files from a hard drive rather than from a CD, and use Toast's RAM buffering feature to full advantage.

Pro Keyboard shutdown

TIP One of the bad things about Apple's Pro Keyboard is its lack of a power key. To compensate, I created three simple AppleScripts and assigned them to function keys (F13, F14, and F15) so I could use my keyboard for sleep, restart, and shutdown commands. To boot up, I still use the power button on the front of my iMac. A template follows (you can replace `sleep` with `restart` or `shut down` as desired):

```
tell application "Finder"
    activate
    display dialog "Sleep?"
buttons {"Cancel", "OK"}
default button 2 with icon stop
    if the button returned of
the result is "OK" then
        sleep
    end if
end tell
```
Joshua Sucher
Or, you can use this simpler script:
```
tell application "Finder"
    activate
     shut down
    end tell
```
Again, you'll need to assign a function key.
David Cohen

Import addresses

Q How do I transfer an address book from Netscape to Eudora? I prefer Eudora, but don't want to lose my preferences.
Marian MacLeod

A I recommend taking advantage of a Web-based application such as ABConverter (**www.jhanda.com/ABConverter**), which costs about $10 per use, to do the job. But I prefer a free – and more devious – method, a little something I call the Outlook Express Runaround. The idea behind the Runaround is to use Microsoft Outlook Express 5 as a conduit for moving your Netscape addresses to Eudora. Here's how it works:

Download and install a copy of Microsoft Outlook Express 5 (**www.microsoft.com/mac/ download**). Now launch Outlook Express and select Import from the File menu. In the resulting window select the Import From An Application option, and in the succeeding window select Netscape Communicator 4.0 Or Higher. Go to the next window and deselect every option except Addresses. If you want to import email messages as well, leave Mail Messages selected. Click on the tiny right-pointing arrow at the bottom of this window, and your Netscape addresses will waltz their way into Outlook Express. Then you just click on Finish and quit the program.

Fire up a copy of Eudora 5 and select the Import

Drop formatting
To lose Word's formatting when copying and pasting, see Drop Word's formatting

Mail command. In the window that appears, select Outlook Express 5 from the pop-up menu and click on OK. Select Main Identity, and then click on the Import Account button in the next window. Finally, in the Import Mail window, select only the Address Book Information option and click on OK. In less than a long wink, the Netscape addresses you imported into Outlook Express will be shoveled into Eudora's Address Book.

Drop Word's formatting

TIP This has undoubtedly happened to you. You copy text from one Word document into another and find that the formatting from the first document has travelled with it – forcing you to reformat the text. Thankfully, there's a way around this.

Just copy the text and, instead of choosing Paste from the Edit menu, choose Paste Special. When the resulting dialog box appears, click Unformatted Text and OK. Your pasted text will now take on the formatting of the document you paste to.

Replace SimpleText

TIP If SimpleText is just too basic a text editor for you, give Marco Piovanelli's $10 shareware text editor, Style, a try. In addition to supplying all the features of SimpleText – except speech – Style includes support for URLs and AppleScript and offers a search and replace function. Plus, Style lacks SimpleText and TeachText's 32,000 character limit. You can find your copy at **www.macdownload.com**.

OS X's invisible files

TIP If you give a volume the same name as one of the basic folders used by Mac OS X Public Beta – Applications, Library, Mac OS 9, or System, for example – those folders may not be visible.

Button bar break

TIP In AppleWorks, the Button Bar – that long strip of buttons that appears at the top of your Mac's screen – may contain more buttons than you can see.

There are two ways to reveal these additional buttons. Way 1 is to click on the Arrow icon at the left and right sides of the bar. If the arrow is black on either side, it means more buttons are available and you can reveal them by clicking on the arrows to scroll the bar one way or the other.

The second way is to increase the resolution of your Mac's monitor. Just switch the monitor resolution from 640-x-480 pixels, for example, to 1,024-x-768. As more screen space becomes available, more of the Button Bar is revealed.

Printing from the Finder

TIP Those who have used the Finder's Print Window command have doubtless discovered that when you attempt to print certain windows, the complete

contents of the window aren't printed. Apple suggests you may be able to work around this problem by changing the view of the window – to Icons or Buttons if the current view is set to List, for example. You may also have more success if the window contains fewer items.

FireWire daisychain

TIP You can connect upto 63 powered FireWire devices to an iBook or PowerBook (if you have added extra ports), though you can only connect 16 devices in one chain. If you're connecting unpowered FireWire devices – devices that pull their power from the PowerBook or iBook rather than a power supply – you're limited to a single device.

Office management

TIP Longtime Microsoft Office users who have upgraded to Office 2001 may be mourning the loss of Microsoft Office Manager (MOM) – the control panel that provides easy access to components of Microsoft Office as well as quick launch capabilities for applications you care to add to the MOM menu. These people may now dry those tears. Microsoft has released a version of MOM that's compatible with both Microsoft Office 2001 and Office 98. You can find your copy at **www.microsoft.com/mac/ download/default.asp**.

Navigate windows

TIP If your windows are bunged full of icons, using the scroll bars can take ages. Holding down the ⌘ key and dragging the mouse – making sure you haven't clicked on an icon – will allow you to scrub around inside the window, a'la Adobe Photoshop and QuarkXPress.

Quake online

TIP Here's a tip for those people who can't find servers to play multiplayer Quake 2 online – you should head to **http://members.aol.com/L4Q2** and download the java-based browser L4Q2 available there. This will let you see currently running matches and ping rates before joining. Thank heavens!
Erin Thomson

QuickTime and iBooks

TIP I've found that installing the UK QuickTime 5 Preview on my iBook messed up FireWire DV with iMovie 2, and I suspect this happens with all FireWire Macs. To solve it, back up the files QuickTime FireWire DV

Enabler and QuickTime FireWire DV Support from QuickTime 4. For some reason the older version 2.2 files work fine with QuickTime 5, but the updated version 2.2.2 causes problems.
Ashley Moran-Smith

Print Word shortcuts

TIP Care for a printout of your Microsoft Word customized keyboard-shortcuts? Simple enough. Just select Print from the File menu, select Microsoft Word from the General pop-up menu, and Keyboard Assignments from the Print pop-up menu. Press Print to receive a printout of your custom keyboard commands.

To print a complete list of Word's keyboard commands, select Macros from the Macro submenu in the Tools menu. In the resulting window, select Word commands in the Macros In pop-up menu. Scroll down the list of macros and highlight List Commands. Click Run and in the next dialog box choose either "Current menu and keyboard settings" or "All Word commands". Word will then generate a Word file that lists all the keyboard commands. Print this list at your leisure.

XPress toggling

TIP In QuarkXPress, hold down the ⌘ and option keys and click on an open document, the page magnification will toggel between 100 and 200 per cent.

Type where you like in Word

TIP In Microsoft Word 2001, you can place the cursor anywhere you like in a blank document – even in the middle of the page – as long as you're in Page or Outline view and the "Enable click and type" option is on in the Edit tab of the Preferences window.

Multiple Users security

TIP On Mac models released last summer, if you have a DVD-ROM inserted in the Mac's DVD-ROM drive, the Apple DVD Player launches before the Multiple Users login screen appears.

While this may or may not be a breach of security, at the very least, it's a bit annoying. The workaround is to make sure that you don't leave a DVD-ROM in the player when you shut down or restart.
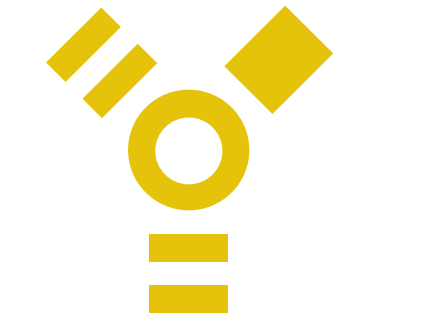
Gore fest
See Quake Online for tips on where to find Quake II players

> Macworld's deputy editor David Fanning and contributing editor Christopher Breen answer readers' questions and select reader-submitted tips for this column. Send your question or tip (include your address and phone number) to David Fanning, Q&A, Macworld, 99 Gray's Inn Road, London WC1X 8UT. You can also send mail electronically, marked Q&A in the subject line, to **qanda@macworld.co.uk**. We pay £25 for each tip published here.
> We cannot make personal replies, so please do not include a stamped-addressed envelope.

Screen therapy

Mid-sized monitors tested and rated.

By David Fanning and Seth Havens

Not everyone has the room or the budget to fit a hulking 22-inch monitor on his or her desk. So for those looking for a new monitor, we've tested 24 models from 15 manufacturers to find the best deals and the highest quality in the 17- and 19-inch monitor brackets.

There are many reasons to upgrade your current monitor of choice. If you're using anything less than a 17-inch monitor, the extra screen-space afforded by a mid-size monitor will knock your socks off.

LG

design

buying advice

specs

score

ADI MicroScan G710

ADI is one of the few manufacturers that has gone to the trouble of including colour calibration. Colorific is good calibration software, though it has become less important now that Apple's own Monitor control panel includes basic calibration.

Image quality is good, if not outstanding. The G710 is value for money, but is bettered by the LG774.

Company	ADI
Price	£229
Screen size	17 inches
Viewable size	16 inches
Optimum resolution	1,280-x-1,024 pixels at 85Hz
Screen type	Aperture grille; flat
Contact	ADI
Telephone	020 8327 1900
URL	www.adieurope.com

Image quality ▮▮▮▮▮▮▮▮ 8
Design/usability ▮▮▮▮▮▮▮ 7
Value for money ▮▮▮▮▮▮▮ 7

Star Rating ★★★★/7.7

Eizo FlexScan T561

The Eizo logic of centralizing all controls around a single button must have seemed like a good idea to somebody. However, sausage-fingered oafs – like myself – prove that this isn't the best way to control a monitor. Its image quality is not up to par either, which makes this model poor value at such a high price. The ultra-boxy design lost it some marks, too.

Company	EIZO
Price	£329
Screen size	17 inches
Viewable size	15.8 inches
Optimum resolution	1,280-x-1,024 pixels at 85Hz
Screen type	Aperture grille; flat
Contact	ProDisplay
Telephone	01483 719 500
URL	www.eizo.co.uk

Image quality ▮▮▮▮▮▮ 6
Design/usability ▮▮▮▮▮▮ 6
Value for money ▮▮▮▮▮▮ 6

Star Rating ★★★/6.0

Hansol 710D

Hansol has made an affordable monitor with the 710D, but it isn't without its flaws. While black-depth is good, image sharpness and convergence isn't so hot. Its controls are clunky and the casing as dull as ditchwater. If you are on a tight budget then this £179 model will do the job – but you may want to think about saving a little extra money to get a better model.

Company	Hansol
Price	£179
Screen size	17 inches
Viewable size	16 inches
Optimum resolution	1,280-x-1,024 pixels at 85Hz
Screen type	Aperture grille; flat
Contact	Hansol
Telephone	01252 360 400
URL	www.hansol.co.uk

Image quality ▮▮▮▮▮▮▮ 7
Design/usability ▮▮▮▮▮▮ 6
Value for money ▮▮▮▮▮▮▮ 7

Star Rating ★★★/6.8

Iiyama VisionMaster A705MT

If you were in a darkened room looking at the image from this monitor, you'd be impressed. Its blacks and contrast are unsurpassed, and all aspects of its image are excellent. Once the lights are on, though, you're faced with yet another beige box with average controls. If you care nothing for aesthetics then I guess this isn't a problem – but Mac owners these day do.

Company	Iiyama
Price	£209
Screen size	17 inches
Viewable size	15.9 inches
Optimum resolution	1,024-x-768 pixels at 85Hz
Screen type	Aperture grille; flat
Contact	Iiyama
Telephone	01438 745 482
URL	www.iiyama.com

Image quality ▮▮▮▮▮▮▮▮▮ 9
Design/usability ▮▮▮▮▮▮▮ 7
Value for money ▮▮▮▮▮▮▮▮ 8

Star Rating ★★★★/8.3

Maxdata Belinea 10 30 80

This isn't a cheap monitor but at least it came close to perfection on image quality. However, its controls are a tad quirky: it was a while before we realized that two of the three "buttons" on the front are not actually buttons at all. This isn't one the the cheapest monitors on test – but at least Maxdata is getting away from the straightjacket of boxy design, using interesting lines.

Company	Maxdata
Price	£221
Screen size	17 inches
Viewable size	16 inches
Optimum resolution	1,280-x-1,024 pixels at 85Hz
Screen type	Aperture grille; flat
Contact	Maxdata
Telephone	01344 788 910
URL	www.maxdata.co.uk

Image quality ▮▮▮▮▮▮▮▮▮ 9
Design/usability ▮▮▮▮▮▮▮▮ 8
Value for money ▮▮▮▮▮▮▮▮ 8

Star Rating ★★★★/8.5

Mitsubishi Diamond Plus 73

For a budget monitor, the Diamond Plus boasts a fairly sleek design – though the three-button interface is not the best on offer. Neither is its image quality is not as good as other models at this price, especially on contrast – which gave a notably pale, washed-out image. While its price is attractive, Mitsubishi should be delivering better image quality than it's managed here.

Company	Mitsubishi
Price	£178
Screen size	17 inches
Viewable size	16 inches
Optimum resolution	1,024-x-768 pixels at 85Hz
Screen type	DiamondTron; flat
Contact	NEC/Mitsubishi
Telephone	020 7202 6300
URL	www.mitsubishi-monitors.co.uk

Image quality ▮▮▮▮▮▮ 6
Design/usability ▮▮▮▮▮▮▮ 7
Value for money ▮▮▮▮▮▮▮ 7

Star Rating ★★★/6.6

Apple Studio Display

The Apple Studio Display is a beautiful monitor. It has some nifty features made possible by the ADC (Apple Display Connector). Unfortunately, this connection both empowers and disables the monitor: It will only work with certain new G4 Power Macs and the G4 Cube.

If you have one of these models, or are thinking of buying one soon, you'll have access to fantastic controls over the screen. There are no fiddly buttons to contend with – everything is controlled by the Monitors Control Panel. Image quality is perfect because of internal calibration-components that measure screen image. The only two drawbacks with the model are compatibility and price.

Company	Apple
Price	£349
Screen size	17 inches
Viewable size	16 inches
Optimum resolution	1,024-x-768 pixels at 85Hz
Screen type	Aperture grille; flat
Contact	Apple
Telephone	0870 600 6010
URL	www.apple.com/uk

Image quality ▮▮▮▮▮▮▮▮▮▮ 10
Design/usability ▮▮▮▮▮▮▮▮▮ 9
Value for money ▮▮▮▮▮▮ 6

Star Rating ★★★★/8.8

LG Flatron 774FT

After looking at endless grey boxes, the LG 774FT actually sparked a round of oohs and ahhs. The metallic blue facia sports an array of touch-sensitive controls.

The integrated stand is a unique rocker design that allows ample space for stowing the keyboard under the screen.

All these design features count for nothing if image quality isn't up to scratch, but fortunately – it scored well on this front.

Its £249 price tag is steep, but its quality of image and design is well worth it. This monitor is a fine example of what happens when product designers push themselves to do something innovative yet effective.

Company	LG Electronics
Price	£249
Screen size	17 inches
Viewable size	16 inches
Optimum resolution	1,024-x-768 pixels at 85Hz
Screen type	Aperture grille; flat
Contact	LG Electronics
Telephone	0870 607 5544
URL	www.lgelectronics.co.uk

Image quality ▮▮▮▮▮▮▮▮▮ 9
Design/usability ▮▮▮▮▮▮▮▮▮▮ 10
Value for money ▮▮▮▮▮▮▮▮ 8

Star Rating ★★★★★/9.0

Product scores

Individual bar-chart quality scores run from 0-10, and reflect specific aspects of performance. Star Rating is an overall score, encapsulating these individual scores, plus all other factors likely to influence your choice of purchase.

If you're already using a 17-inch model there's a noticeable difference between that and a 19-inch model. The extra elbow room allows for more palettes and windows to be open, or a bigger battlefield for gamers.

A further reason for buying a new monitor is because your old one is dead – or dying. After a couple of years, monitors start to show signs of ageing. Often, focus and convergence are the first to suffer, as internal magnets loose their accuracy. To begin with, this can be corrected using on-screen controls, but after continued use, the screen will end up out of focus.

Another symptom of impending meltdown is a jumpy image, or noise at the edges of the screen. This can be a symptom of a failing power supply.

If you have the resources, choosing a bigger monitor can give you a whole new outlook on computing. Even just moving from a 17-inch screen to a 19-inch screen gives a wonderful feeling of freedom. Things like drag-&-drop are so much more useable when you have room to manoeuvre. Photoshop users will appreciate the ability to zoom into a portion of an image without loosing the bigger picture.

So how do you wade through the quagmire of specifications, inflated claims and advertising spin to chose your monitor? Well, you should be armed with at least the knowledge of which specifications are relevant and which aren't. Here's what to look out for when making your choice.

Dot pitch The measurement of dot pitch relates to the distance between the dots that make up the screen image. The trouble is, there are two types of screen and at least three ways of measuring dot pitch. Whatever the type of screen, manufacturers always measure dot pitch in the most flattering way to that technology.

Measuring dot pitch – or stripe pitch, as it's called if it's an aperture-grille screen – is done in different ways, so comparing results is like comparing apples and bananas: the numbers quoted become irrelevant. In this round-up, we've elected not to quote dot or stripe pitch, as it serves only to confuse. Almost all the models tested use aperture-grille technology, with only the most basic models taking the shadow-mask route.

Shadow mask and aperture grille These are the two classes of screen technology. Shadow-mask screens are made up of circular dots, while aperture grille – also known as Trinitron – uses tiny vertical oblongs. Monitors work by shooting cathode rays that light up the phosphors painted on the inside of the glass tube. To define individual pixels, the ray needs to be directed through either a shadow mask or an aperture grille. A shadow mask is a sheet with a honeycomb of holes punched

design | buying advice | specs | score

NEC MultiSync FE750
NEC has done a good job of making a monitor that – while being a beige box – is still pleasing to the eye. To be fair, NEC probably calls the colour "ivory" rather than beige. The buttons are clear and easy to understand. Image quality is generally good, scoring particularly high on sharpness. A bonus is being able to tweak convergence for different areas of the screen.

Company	NEC
Price	£215
Screen size	17 inches
Viewable size	16 inches
Optimum resolution	1,280-x-1,024 pixels at 85Hz
Screen type	Aperture grille; flat
Contact	NEC/Mitsubishi
Telephone	020 7202 6300
URL	www.nec-monitors.com

Image quality 8
Design/usability 8
Value for money 8

Star Rating ★★★★/8.0

Samsung SyncMaster 700IFT
The SyncMaster hides its controls on a drawer that pops out of the front panel. They are well marked and easy to use. Samsung also includes a screen-area focus control, which adds extra value to an exemplary interface. Image quality is pretty good, though not outstanding. For the price, it does a good job – but it would be more attractive if it cost a few pounds less.

Company	Samsung
Price	£239
Screen size	17 inches
Viewable size	16 inches
Optimum resolution	1,280-x-1,024 pixels at 85Hz
Screen type	Aperture grille; flat
Contact	Samsung
Telephone	0800 521 652
URL	www.samsung-electronics.co.uk

Image quality 8
Design/usability 9
Value for money 7

Star Rating ★★★★/7.9

Sony MultiScan E200E
Sony got the image almost totally spot-on with this model. This is just as well, because its controls are poorly laid-out (they're accessed via an inverted mushroom under the front panel of the screen). This is discreet but fiddly. It has great image quality, but looks plain, which – combined with its infuriating interface – loses it marks. You can do better at this price.

Company	Sony
Price	£259
Screen size	17 inches
Viewable size	16 inches
Optimum resolution	1,024-x-768 pixels at 100Hz
Screen type	Trinitron; flat
Contact	Sony
Telephone	0990 424 424
URL	www.sony.co.uk

Image quality 9
Design/usability 5
Value for money 7

Star Rating ★★★★/7.5

ViewSonic PF775
Monitors don't come much squarer or beiger than this, so its price seems high for its design. However, image quality is well above average – offsetting the loss of points for design. The on-screen controls also boost this score. The asking price would be fine if you judged it on screen image alone – but when factoring in its ugliness, becomes difficult to justify.

Company	Viewsonic
Price	£239
Screen size	17 inches
Viewable size	16 inches
Optimum resolution	1,280-x-1,024 pixels at 90Hz
Screen type	Aperture grille; flat
Contact	Viewsonic
Telephone	01483 719 500
URL	www.viewsonic-.com/uk

Image quality 9
Design/usability 7
Value for money 7

Star Rating ★★★★/7.9

ADI MicroScan G910
Although ADI has included Colorific to help with colour calibration, image quality isn't particularly outstanding. This is a shame, because the specifications are pretty good. The controls are average and easy enough to navigate, but lack the extra features of some other models. The G910 may be slightly rounded, but it's still essentially a beige box. Not a great deal for £349.

Company	ADI
Price	£349
Screen size	19 inches
Viewable size	18 inches
Optimum resolution	1,600-x-1,200 pixels at 85Hz
Screen type	Aperture grille; flat
Contact	ADI
Telephone	020 8327 1900
URL	www.adieurope.com

Image quality 7
Design/usability 7
Value for money 6

Star Rating ★★★/6.9

Eizo FlexScan F730
Like its smaller sibling – the T561 – the F730 shares the clumsy single-button control interface. It also shares the less-than-top image quality, too. This adds up to a particularly poor deal, as it is one of the more expensive screens that we tested. Either Eizo needs to re-evaluate its pricing structure, or it should look to come up with a better monitor.

Company	Eizo
Price	£409
Screen size	19 inches
Viewable size	17.8 inches
Optimum resolution	1,280-x-1,024 pixels at 85Hz
Screen type	Shadow mask
Contact	ProDisplay
Telephone	01483 719 500
URL	www.eizo.co.uk

Image quality 7
Design/usability 6
Value for money 6

Star Rating ★★★/6.4

Formac ProNitron 19/600
Formac has been putting together and reasonably priced monitors for years. This one offers better-than-average image quality, even if the styling is bland and the beigest of beige shades. Although a reasonable screen for the cash, you could save a little more and buy a higher-end monitor. However, Formac does plans to ship calibration software with all future models.

Company	Formac
Price	£325
Screen size	19 inches
Viewable size	18 inches
Optimum resolution	1,280-x-1,024 pixels at 85Hz
Screen type	Aperture grille; flat
Contact	Formac
Telephone	020 8533 4040
URL	www.formac.co.uk

Image quality 7
Design/usability 7
Value for money 7

Star Rating ★★★★/7.4

Hansol 920D
This is a big screen at a small-screen price. Though image quality isn't spectacular and the casing isn't impressive, those on a budget will appreciate this monitor. The controls are not particularly slick either, but you can't argue with the price. If you don't require perfect picture quality, but do value having a larger screen, this is your best bet.

Company	Hansol
Price	£259
Screen size	19 inches
Viewable size	18 inches
Optimum resolution	1,280-x-1,024 pixels at 85Hz
Screen type	Aperture grille; flat
Contact	Hansol
Telephone	01252 360 400
URL	www.hansol.co.uk

Image quality 8
Design/usability 6
Value for money 8

Star Rating ★★★★/7.6

1,024 pixels
1,280 pixels

Screen resolution numbers relate to the number of horizontal and vertical pixels that make up your screen image. The larger the numbers, the more information you can fit on your screen. The refresh rate, or timing, is the number of times per second the picture is redrawn. The number is expressed in hertz and the bigger the number the better.

through it. An aperture grille uses tightly held vertical wires to separate the beam. Because the wires are thinner than the shadow mask, more light can get through.

The difference between more or less light getting though is important for picture quality. Part of the construction process involves tinting the glass, to make the screen appear black when no light is directed at it. This is how black areas in images are rendered on screen. The more light that makes it to the screen, then the darker the tint can be made. Because aperture-grille monitors are brighter, such screens also have darker blacks and a greater spread of contrast. However, this doesn't make aperture-grille screens automatically better than shadow masks – but at this size and

price range, aperture grille is usually best. Only high-end monitors with hardware calibration, such as the £3,999 Barco monitor we tested last month, really get the best out of shadow-mask technology.

Refresh rate and resolution These are better – but not definitive – measures of quality. They're shown in the specs as optimum timing. Refresh rate refers to the number of times the screen is redrawn every second. Faster refresh rates give less visible flicker. This makes the screen easier to view for long periods. It has been suggested that screens with lower refresh rates can cause headaches and eye strain. A refresh rate of 85Hz is fine, and anything greater is a bonus. Lower refresh rates are still useable, but 75Hz and less can appear flickery.

The refresh rate is set by the graphics card. A monitor may be capable of 120Hz, but will reach this only if the video card can output at that rate. Maximum refresh-rate is also linked to resolution settings. If a monitor can handle a 120Hz refresh rate, it may only be able to do it at a 1,024-x-768-pixel resolution.

Higher resolutions mean the monitor has to work harder to refresh because there are more lines to draw on the screen. To make things simple, we've quoted the highest suggested resolution and refresh rate. This tends to be around 1,280-x-1,024 pixels for the resolution, and around 85Hz for the refresh rate on the larger 19-inch models. The 17-inch models tend to use 1,024-x-768 pixels as a base resolution. If you run the

screen at a lower resolution, the refresh rate can often be set higher.

Being able to set high resolutions is something of a mixed blessing when using a Mac. While high-resolution screens give you a larger desktop, your desktop icons are rendered minute to the point of being illegible. The same happens to text in Mac menus. A resolution of 1,280-x-1,024 pixels is about the highest that will maintain legible text. If your eyesight is not so hot, though, 1,024-x-768 pixels might be more suitable.

Screen control
When you take delivery of a monitor, it should be primed with factory settings.

Iiyama VisionMaster A902MT

Iiyama has stuffed this monitor with all kinds of goodies, such as a USB hub and speakers. These are nice touches, but screen quality is enough for this model to stand on its own. While the speakers are a little tinny, the image is excellent. It may be a little more expensive than some screens, but if you include the price of the hub and speakers it adds up to pretty good value.

Company	**Iiyama**
Price	**£349**
Screen size	**19 inches**
Viewable size	**18 inches**
Optimum resolution	**1,600-x-1,200 pixels at 85Hz**
Screen type	**Aperture grille; flat**
Contact	**Iiyama**
Telephone	**01438 745 482**
URL	**www.iiyama.com**

Image quality		9
Design/usability		6
Value for money		8

Star Rating ★★★★/8.1

Maxdata Belinea 10 60 80

The Belinea range sports the same style of controls that utilizes a rather irritating dial mechanism. Though well-featured, the interface is difficult to navigate – and its design isn't great, either. Image quality, though, is reasonably good – if not outstanding. The case is sleek and narrow , which helps. Otherwise this is an average monitor.

Company	**Maxdata**
Price	**£321**
Screen size	**19 inches**
Viewable size	**18 inches**
Optimum resolution	**1,280-x-1,024 pixels at 85Hz**
Screen type	**Aperture grille; flat**
Contact	**Maxdata**
Telephone	**01344 788 910**
URL	**www.maxdata.co.uk**

Image quality		8
Design/usability		6
Value for money		8

Star Rating ★★★★/7.5

NEC MultiSync FP950

The FP950 is similar to the 17-inch version, sporting the same controls and casing design. Unfortunately, it also sports a similarly high price, detracting from the package as a whole. This is a shame, because the FP950 is a fairly good monitor with above-average controls and image quality. It's black depth is excellent – but this alone can't justify its price.

Company	**NEC**
Price	**£420**
Screen size	**19 inches**
Viewable size	**18 inches**
Optimum resolution	**1,600-x-1,200 pixels at 85Hz**
Screen type	**Aperture grille; flat**
Contact	**NEC/Mitsubishi**
Telephone	**020 7202 6300**
URL	**www.necmonitors.com**

Image quality		8
Design/usability		8
Value for money		7

Star Rating ★★★★/7.9

Nokia 920C

This monitor plays on a small variation on the bland square box that seems so popular. Its edges are rounded and at least some thought has gone into control positioning. Its image is reasonable, but is let down by its having shadow mask – one of the few models tested to use this technology. This detracts from performance because it means the screen is curved.

Company	**Nokia**
Price	**£319**
Screen size	**19 inches**
Viewable size	**17.9 inches**
Optimum resolution	**1,280-x-1,024 pixels at 85Hz**
Screen type	**Shadow mask**
Contact	**Viewsonic**
Telephone	**0800 833 648**
URL	**www.viewsonic.com/uk**

Image quality		7
Design/usability		7
Value for money		8

Star Rating ★★★★/7.3

Samsung SyncMaster 900SL+

The SyncMaster 900SL+ has fair image-quality, but, as one of the few shadow-mask monitors, its curved screen sticks out like a sore thumb. This isn't like the goldfish bowls of old, but even a slight curvature is obvious compared with the flat screens. You can get a flat-screen monitor that performs as well on image quality and for less cash – like the Hansol.

Company	**Samsung**
Price	**£339**
Screen size	**19 inches**
Viewable size	**18 inches**
Optimum resolution	**1,600-x-1,200 pixels at 85Hz**
Screen type	**Shadow mask**
Contact	**Samsung**
Telephone	**0800 521 652**
URL	**www.samsung-electronics.co.uk**

Image quality		8
Design/usability		7
Value for money		8

Star Rating ★★★★/7.0

Sony MultiScan G400

There's still a certain amount of cachet associated with owning a Sony monitor. As the inventor of aperture-grille technology, Sony has had a head-start on competitors. The G400 is capable of displaying beautiful images, but the controls are infuriatingly fiddly. Despite the fashionable label, the results don't warrant the rather hefty price tag of £439.

Company	**Sony**
Price	**£439**
Screen size	**19 inches**
Viewable size	**18 inches**
Optimum resolution	**1,280-x-1,024 pixels at 85Hz**
Screen type	**Trinitron; flat**
Contact	**Sony**
Telephone	**0990 424 424**
URL	**www.sony.co.uk**

Image quality		8
Design/usability		5
Value for money		6

Star Rating ★★★/6.8

ViewSonic PF790

The PF790's design is the epitome of bland, from the grey square box to... the grey square box. It certainly won't win any beauty competitions – until, that is, you turn it on. The screen image almost entirely makes up for its design, offering vivid colours, blacks and contrast. The controls are capable if a little fiddly – but with luck, you won't need them.

Company	**Viewsonic**
Price	**£369**
Screen size	**19 inches**
Viewable size	**18 inches**
Optimum resolution	**1,280-x-1,024 pixels at 85Hz**
Screen type	**Aperture grille; flat**
Contact	**Viewsonic**
Telephone	**0800 833 648**
URL	**www.viewsonic.com/uk**

Image quality		9
Design/usability		7
Value for money		8

Star Rating ★★★★/8.2

LaCie Electron19 Blue

LaCie easily got the top prize for its 22-inch screen, due to great colour calibration. The 19-inch version looks the same, but lacks hardware calibration. Top marks were given for image quality on almost every level, and its ease of use was a delight.

The hood may not be to everybody's taste, but it cuts reflection of ambient light down to zero, so it makes a real improvement to the image. For people that are not so constrained by colour accuracy, such as Web designers, this monitor is ideal.

Company	**LaCie**
Price	**£439**
Screen size	**19 inches**
Viewable size	**18 inches**
Optimum resolution	**1,600-x-1,200 pixels at 85Hz**
Screen type	**Aperture grille; flat**
Contact	**LaCie**
Telephone	**020 7872 8000**
URL	**www.lacie.co.uk**

Image quality		10
Design/usability		9
Value for money		8

Star Rating ★★★★★/9.2

This round-up of mid sized monitors omits flat-panel LCD displays. See our group test of flat panels in the July 2000 issue of *Macworld*, as well as our reviews of Apple's latest LCDs in September 2000.

These should be close to the optimum performance. If adjustments are needed, they should be for minor things like contrast and brightness, not radical tweaking of pincushion settings or trapezium adjustments – which adjust the shape of screen. The controls should also be easy to understand and reach – something some models failed at. The ideal monitor should be both sleek yet fully featured. There's little point in a monitor having a single control button to simplify its look if this compromises ease of control.

Colour issues

If you're serious about colour, you need some sort of calibration. Luckily, these days Apple provides a calibration tool as part of its Monitors Control Panel. This is great for making sure your screen image is at least in the ball park when it comes to accuracy.

For more advanced calibration, you need a hardware calibrator. This is only necessary for high-end on-screen proofing for print work. If you're doing this standard of work, you would be better off with one of the super-sized monitors featured last month.

By now you should have the knowledge needed to sort the wheat from the chaff. We've tested just about every 17- and 19-inch monitor currently available. There are, however, some models that we didn't look at. To keep the number of monitors to a reasonable level, we looked at only one screen-size per manufacturer. In fact, manufacturers often have many sub-models

at the same screen size, with a variety of extras. These extras can be things such as built-in USB hubs or speakers. If you choose a monitor with these extras, you should weigh the price difference against buying them separately. Remember, built-in speakers are rarely as good as external ones. Only the space-saving features make them a good idea. The built-in USB hubs are much the same as external versions, so they're quite a useful feature.

The other models that won't appear in this round-up are the ones that were launched after our press date. There are around 20 monitors released every month. With such a large number of screens included in our tests, some models are sure to be replaced soon.

When buying a monitor, try to view it in a showroom if possible. This opportunity is rare, but it's the best way to guarantee that the quality is what you expect. Our tests should give you a pretty good idea of what you want, so it's just a matter of tracking down a dealer with that particular model. The other option is buying by mail order. This is the best way to ensure a bargain, but some mail-order companies shy away from monitor sales due to the fragility of the screens. But unless you get a total bonehead that will drop your monitor from the back of his truck, you should be fine.

So, expand your horizons – and your desktop – by buying a bigger monitor. Prices have never been so low, or the choice so extensive. **MW**

Editing XPress fonts

Personalizing type is easier than you think.
By Terri Stone and Amy Conger

More typefaces are available today than ever before. But sometimes you want your words to look like no one else's. When a headline or logo has to make a unique statement, but you don't have the budget to commission a font, you can customize existing type.

Type customization has long been possible in vector-drawing programs, such as Adobe Illustrator and Macromedia FreeHand, though with these programs, you have to export the results as an EPS file for placement in a page-layout program. But you can tweak type directly in QuarkXPress 4.1 (www.quark.com) – all you need is the Text To Box command and a willingness to experiment.

You can easily add borders; change a letter's colour, position, or shape; and fill letters or entire words with images or text. These techniques don't work on styled text, so if you want all caps, for example, you'll have to create them manually by holding down the shift key as you type instead of relying on font styling.

Before you try any of these tips, begin by typing the word or words you want to modify in a text box. Select up to one line of text with the Content tool, and then go to the Style menu and select Text To Box. A duplicate of your selected text, made up of bézier lines and without colour, will appear below the original. Click on it, and you can start customizing your text.

1. Outline and colour all letters Once you've converted your type, you can outline and colour it as you would any QuarkXPress box. You can easily control the weight and style of the outlining stroke you use.

■ With the duplicate text selected, go to the Item menu and select Modify (or press ⌘-M). In the resulting dialog box, choose an appropriate box colour and shade. Click on the Frame tab, and pick a line width, style, colour, and shade (A).
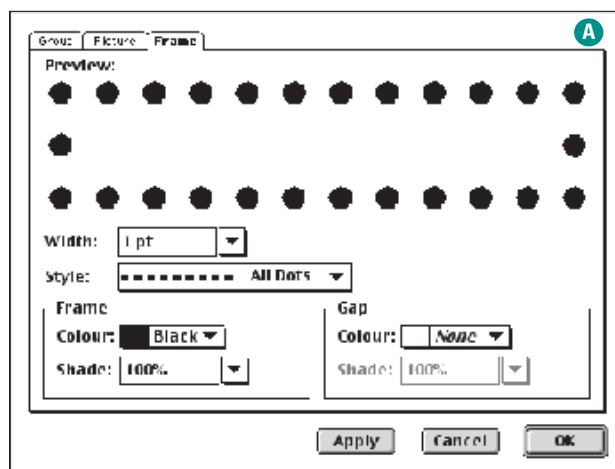
■ By playing with these variables, as well as with the Blend feature available in the Colours palette, you can create many different effects (B).

■ You can easily create a shadow effect by duplicating a word (⌘-option-D). In the resulting dialog box, give it only a small offset (C), and then change its colour (D).
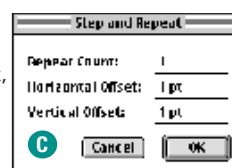
2 **Style letters** To further customize your type, you can change the colour and position of individual letters in subtle or dramatic ways.

■ To separate letters so you can treat them differently, go to the Item menu and select Split: Outside Paths. Now you have many ways to manipulate the type.

■ For example, you can create a rainbow effect by giving each letter a different colour (A). Just select the letter and click on the appropriate shade in the Colours palette.

A

rainbow

■ Or select part of a letter, such as the dot of an i, and give it another colour (B).

B

simple

■ You can also rotate individual letters or parts of letters (C), without affecting the rest of a word, by selecting the letter or its component and entering any value from 0 to 360 degrees in the Measurements palette.

C

tumbling

■ Once you've finished altering individual letters, select all the letters and choose Group from the Item menu, so you won't accidentally lose the look you laboured to achieve.

3 **Break apart all paths** Breaking apart all paths in a letter may not make much sense – until you see what you can do with ornamental typefaces. The results resemble fine art more than they do fonts.

■ Find a dingbat or ornament you like in a picture font such as Zapf Dingbats. This example uses the c and p in Pre–Columbian Ornaments One [A], a shareware font available on several Web sites. Apply the Text To Box command.

A
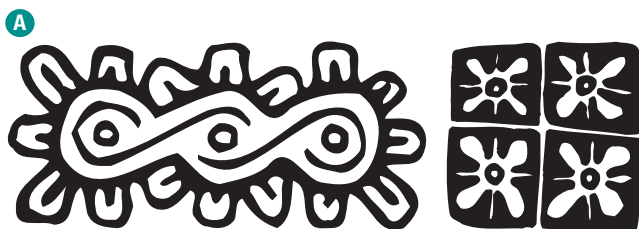
■ Select the box with the Item tool, and then go to Item: Split: All Paths.

■ Apply a fill colour, and you'll see all counters – the white spaces inside letters – fill in (B). Because you have many individual paths, not a compound path, each letter has the same fill colour.

B

■ Now the fun starts. Using either the Item or Content tool, click on any path in the letter and style it as you did in the first tip. This is a great way to achieve a colourful effect (C). To make a piece "knock out", colour it white.

C

■ Once you're satisfied with a character's appearance, lock it by selecting all points and choosing Group from the Item menu.

■ To make the separate paths behave as a compound path again, select them and go to Item: Merge: Combine.

4 **Reshaping letters** You may need to go beyond the original letterforms to make your type stand out. Reshaping letters will give yours a look no one else has.

■ Choose the box, go to the Item menu, and make sure the Shape option in the Edit submenu is selected.

■ Now click and drag on any point or segment in any letter to push and pull the existing bézier curves as far as you dare.

■ You can also convert points and line segments from curved or smooth, points to straight or corner points, and vice versa (A). To do so, click on a point or segment and go to Item: Point/Segment Type.

fondue

A fondue

fondue

■ If you can't get the effect you want using the existing points, you can add or delete points. Add points by option-clicking on a line segment (B). Delete points by option-clicking on existing points. Then push, pull, and convert those points until you get the shape you want (C).

B **C**
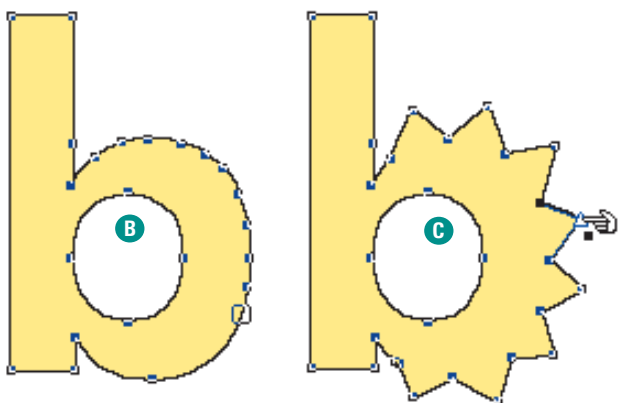
sunburst

5 **Fill with picture or text** A picture is worth a thousand words, especially when a picture is a word. You can fill any combination of letters with an image or with text.

■ The Text To Box command automatically creates a picture box, so it's easy to fill an entire headline with an image. Go to File: Get Picture, or press ⌘-E (A).

A

blue skies

■ To fill individual letters with different images, go to Item: Split: Outside Paths, and then select a letter. Press ⌘-E to place the picture you want inside the highlighted letter (B).

B

LEAVES

■ To convert your letter or word to a text box, select it, go to Item: Content, and then select Text. Now you can import text (File: Get Text, or ⌘-E) or type directly in the letter or word (C). It may take some experimentation to get an effect that looks good and reads well. Try changing the text inset and column settings until the text flows in a readable manner.

C

A BIG
THANK

ALGERNON	LOUDEN LORI
ANGIE APRIL	MARGAUX
BERTIE BILLIE	MANUELLA
BOB BRENDA	MARQUÉ
CARI CATHY	MORRIE NICK
CARLOS CHRIS	NORA NUSHIN
DAVID DENNIS	OLAF PENNY
DOLLY EDDIE	PETE PRESTON
ELLIE FANNY	RACHEL RAND
FRANK FRED	RICK ROBERT
GINA GLORIA	SANDIE SELMA
GRANT HANS	SHARON SUSY
IGGIE IRINA	TERANCE TINA
JASPER JOHN	TOMÁS VICTORIA
JUSTIN KRIS	WALTER
LINDA	BLISS

to all our volunteers!

FileMaker fillip

Automate and customize FileMaker databases. By Scott Love

Creating a basic FileMaker Pro database that can manage your information is so easy, you might be tempted to stop learning once you know how to define fields – such as name, user, and date – and design layouts. But if you take FileMaker Pro one step further – adding buttons that activate scripts – you can automate your databases and customize them to meet specific needs.

Scripts are powerful tools in any program. In FileMaker Pro they're also a snap to create. Thanks to the program's ScriptMaker feature, you don't have to learn a word of code to create buttons – just select from the commands FileMaker provides. You can script buttons that automatically perform variety of tasks, such as switching among layouts, finding a set of records, sorting records, checking spelling, and even sending an email.

To tap into the real power of buttons and scripts, experiment with nesting scripts – one-step subscripts combined in a larger master script. Nesting scripts let you trigger a string of tasks with the click of a button. The script in our sample project, for instance, finds all the incomplete items on a to-do list, sorts them by two criteria, and displays them in a list view – all with one simple click. Once you get the idea, there's no limit to what you can do with FileMaker Pro's buttons.

Get set-up

Before you can begin creating this sample script, you have to set the Find and Sort criteria. If you perform a find and sort with the right criteria just before you create the script, FileMaker Pro will apply those criteria to the script.

Begin by creating a database that manages a simple to-do list. You'll need at least two layouts – a list layout (in this example, List By Client) and a standard layout (in this example, Task Details) – and the following fields: Task_Name, Owner, Client, Task_Notes, and Complete_Date. Next, set the Find function to bring up all records with an uncompleted task – records with an empty Complete_Date field. Go to the Find mode (in version 5, View: Find; in version 4, Mode: Find), enter an equals sign (=) in the Date Completed field (A) to search for empty fields, and click on the Find button (B). To set up sorting, open the Sort Records dialog box (in version 5, Records: Sort; in version 4, Mode: Sort). Add the fields you want to sort by – in this example, Client, followed by Owner – by double-clicking on them in the list on the left (C).
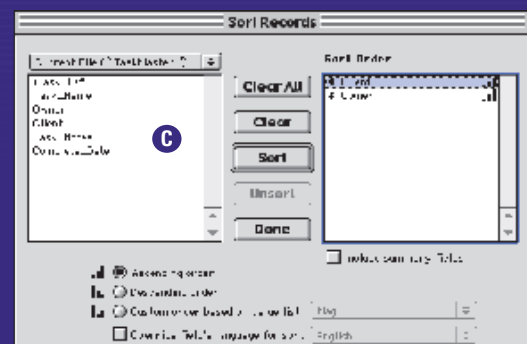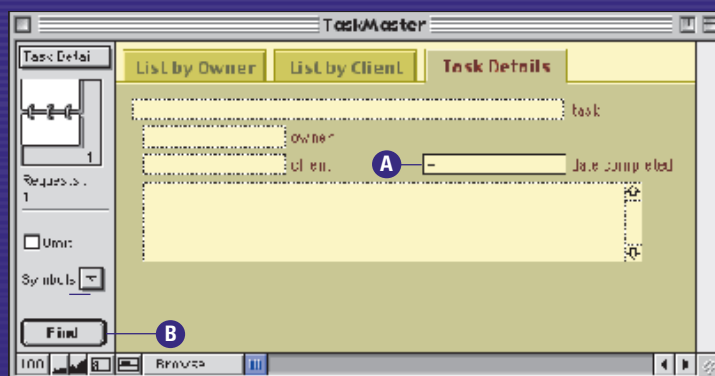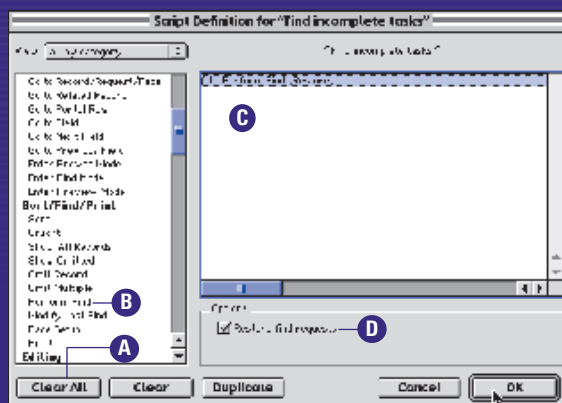
Create subscripts

To create a button that lets you perform multiple tasks, you must assign it a script that contains subscripts. That's where ScriptMaker comes in.

Choose ScriptMaker from the Script menu, and enter a name (in this example, it's Find Incomplete Tasks) in the Script Name field. Click on Create and, in the resulting window, click on Clear All (A) to remove the default script commands. Scroll down the list of commands on the left and double-click on Perform Find (B) to move it into your script (C). Leave the Restore Find Requests option selected (D), so your script will use your most recent Find criteria – in this case, the equals sign in the Date field. Click on OK, and you've completed the first subscript.

To create the second subscript, begin in the main ScriptMaker window. Enter a name for the subscript name, for example, Sort By Client And Owner, and click on Create. Just as you did before, remove the default commands and scroll through the list of actions on the left, but this time double-click on the Sort command. Leave both the Restore Sort Order and Perform Without Dialog options selected, and click on OK. Now you've got two subscripts ready to go.

TIP: You can reuse subscripts. For instance, you can assign a subscript its own button or combine it with other subscripts to create new master scripts.

Create a master script

Now it's time to put the subscripts into the final script using ScriptMaker. Once you've nested them and added an additional command, your script will let you find incomplete tasks, sort by client and owner, and switch to your list layout.

In the main ScriptMaker window, give your master script a name (in this example, it's List Incomplete By Client) and click on Create. Clear the default script commands (A) in the Script Definition window, and double-click on the Perform Script command (B). Leave Perform Subscripts checked, select Find Incomplete Tasks from the Specify pop-up menu (C), and click on OK to finish nesting your first subscript. To nest the second subscript, double-click on the Perform Script command again, but this time select Sort By Client And Owner from the pop-up menu.

Next, double-click on the Go To Layout command. Select the name of your list view – here it's List Incomplete By Client – from the pop-up menu. Leave the Refresh Window option unselected – it's necessary only in certain circumstances, for instance when you've updated calculations. Now click on OK. Your scripting is finished, so click on Done in the main ScriptMaker window.
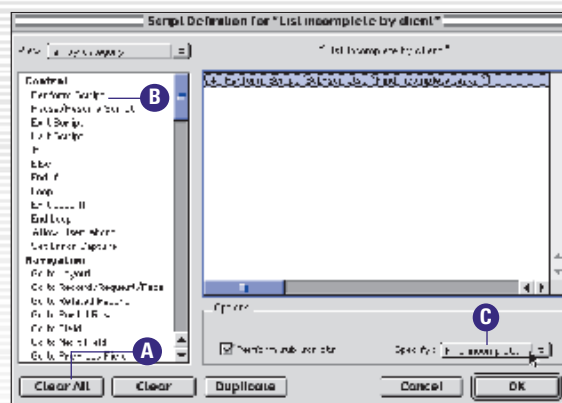
Build a button

N ow it's time for our button to make its appearance. Attaching scripts to buttons is simple – just remember to attach a script to the button you create before placing it on layouts in your database. This will save some grunt work.

Go to Layout mode and click on the Button tool (A). Click-&-drag the cursor across your layout until you get the button dimensions you want (B). In the resulting dialog box, select the Perform Script command (C) and then choose List Incomplete By Client from the Specify pop-up menu (D). Leave the Pause option selected – it won't affect this function – and choose the button style you prefer (E). To pick a button type in version 4, you must go to Edit: Preferences: Application: Layout. Click on OK, and then complete the last step: type a label for your button in the layout.
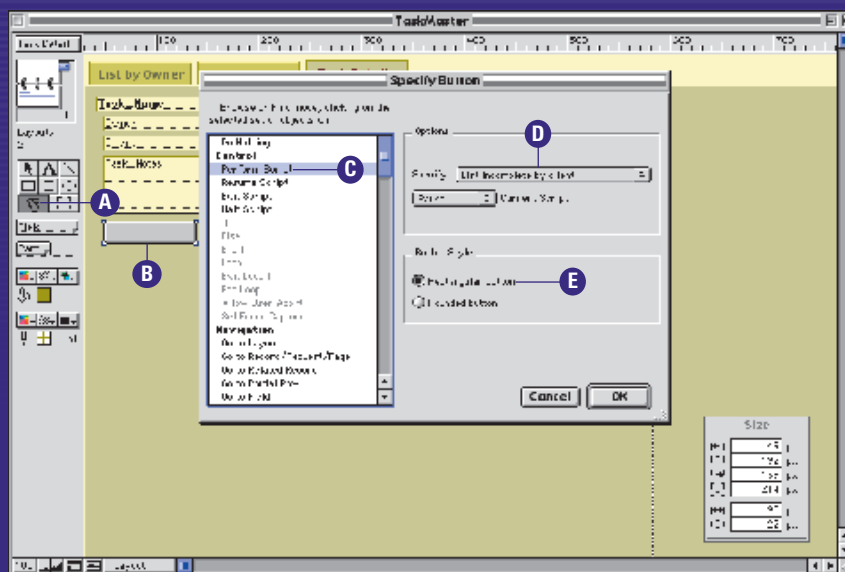
Add a finishing touch

I f you're not satisfied with FileMaker's generic buttons, here's one last user-interface tool for your repertoire: buttons with custom graphics. This step is optional, but it's simple, and you can use the same technique to spruce up any layout.

In version 5, select Picture from the Insert menu. In the Picture dialog box, select the image you want; it will appear on your layout when you click on OK. In version 4, choose Layout mode, and open the Import Picture dialog box (File: Import/Export: Import Picture) to find the image you want for your button and put it in your layout.

Use the guide corners of the image to resize it if you wish. Then, under the Format menu, select Button. Finally, assign a function to the custom button, just as you would for a regular button.

Keep in mind that if you share this database across a network, custom images will cause your layouts to load more slowly. Be sure to test your database before going nuts with custom icons.
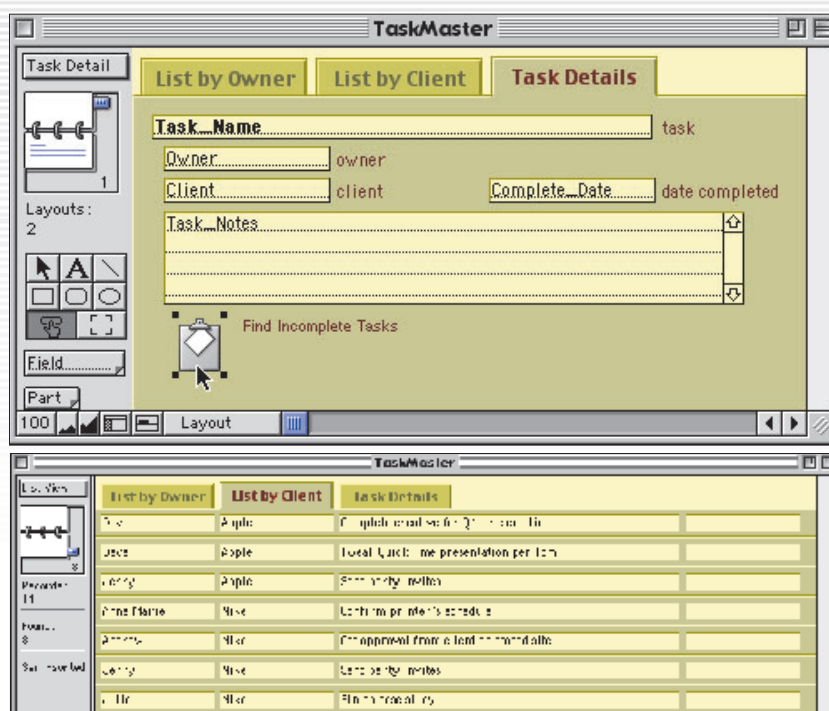
Here's the final result of performing the script.

David Pogue

DAVID POGUE is the author of *iMac for Dummies*
(IDG Books Worldwide, 1998) and the *Great
Macintosh Easter Egg Hunt* (Berkely Books 1998).
He also wrote *Macs for Dummies,* fifth edition,
updated for Mac OS 8, *The Weird Wide Web*
(IDG Books Worldwide, 1997) and *The Microsloth
Joke Book* (Berkeley, 1997). His most recent books
are *Mac OS 9: The Missing Manual* and *iMovie 2:
The Missing Manual* (both Pogue Press, 2000).
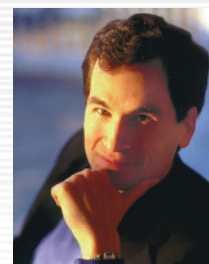
Amazon.con?

For ages, Amazon.com had us in the palm of its hand. From the privacy of our Web browsers, we could buy any book on earth for less than we would spend at a local bookstore. The place seemed up-front and trustworthy.

I first noticed weird things going on at Amazon a couple of years ago, when I met a fellow book author. "Have you been watching my new book?" she asked breathlessly. "Don't you mean reading your new book?" I asked. "No, no – watching it. On Amazon. I hit 359 last week!" She explained how each book's Amazon page shows its sales rank. Hour by hour, you can see how a book is selling, relative to the other five million books in Amazon's catalogue.

I remember thinking: "She sits there all day, clicking on the Reload button over and over again, gloating over each uptick in her book's rank? That's pathetic!" Two hours later, I was doing the same thing.

The thing is, nobody understands how Amazon's sales-rank computations work, and the company isn't telling. It's easy to fool their system; if six friends order your book simultaneously at 5:26 on Thursday afternoon, then, by golly, you'll see it shoot into the top 50 – for a few enchanted minutes, anyway.

One of my books hums along in the 1,500 range during evenings and weekdays, but sinks to 80,000 or so on weekends. What's that about? I mean, if the answer is "People don't buy books on the weekend," then all books should sink at the weekend, and their relative rankings should stay the same. Furthermore, it's a little odd that the sales-rank numbers don't correspond to Amazon's own "most popular" sort order, which appears when viewing search results.

OK, so maybe those numbers are for entertainment purposes only. But what about those reviews that ordinary readers are allowed to post? This Amazon feature, too, holds a grisly fascination for those of us in the book-creation business. It takes a lot of chutzpah for an online store to post negative reviews of the very products it sells. But the funny thing is, Amazon's editors don't post every negative review, as those of us on an authors' mailing list have discovered by comparing notes; the overwhelming majority of books appear with mostly positive reviews.

But I really began to wonder about Amazon in 1999, when the *New York Times* reported that secret promotional fees from publishers, not the independent judgment of editors, determined Amazon's "Editor's Picks".

Amazon responded quickly; it now tells which books are backed by paid placements.

Last September, *Computerworld* magazine unearthed another slippery tactic: Amazon US charges different prices – varying by up to $10 – to different people, depending on "which browser was being used, whether a consumer was a repeat or first-time customer, and which Internet service provider a customer was using". *The Men in Black* DVD, for example, cost the reporter $2 more when using Netscape Navigator than Microsoft Internet Explorer.

Economists call this game "yield management" – the science of playing with prices to eke out the most profit, even though two consumers might pay wildly different prices. Airlines and hotels do it all the time. All that's new is that a company that sells things, instead of services, has joined the party. This wouldn't work in a local store, but Amazon can get away with it, because we can't see what anyone else is paying.

Amazon's pricing games have grown only more complex since then. In August, on all books under $30, the company cut its usual discount of 20 per cent in half. Add in the $4.50 single-book shipping charge, and you can see how Amazon wound up quietly dismantling one of the pillars of its image: that it offers lower prices than the local bookstore.

In November, shortly after the pricing switch became public, Amazon restored the 20 per cent discounts. But that may change again, and the damage has been done; Amazon is no longer Old Faithful. You may have a different shopping experience each time you visit.

It's Amazon's right to fiddle with its business model; it's done nothing illegal, even if some of its experiments have a seamy side. But we, the book-buying public who loved the original bookstore, helped make it the company's only profitable division. By constantly tweaking the formula, Amazon is making us subsidize the struggling departments – the ones that sell cars, patio furniture, and shaving cream. Let's just hope its tinkering doesn't squeeze the appeal out of what was not only the "world's largest bookstore" but also one of the best. **MW**